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Chapter II



MILITARY GEOGRAPHY OF BULGARIA

(JANIS No. 38)



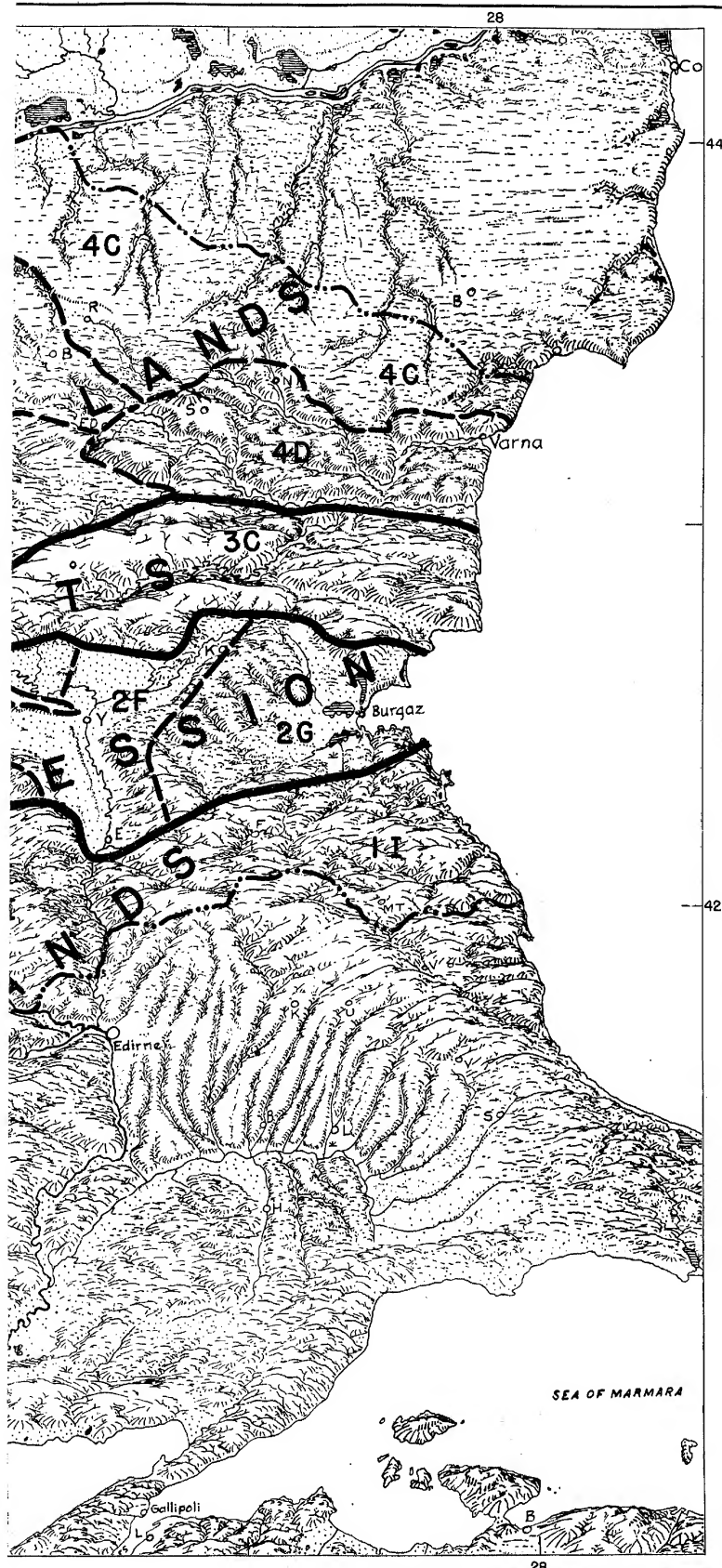
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Table of Contents

	PAGES
20. GENERAL DESCRIPTION	II - 1
A. Regional summary	II - 1
21. RELIEF	II - 2 to II - 9
A. General	II - 2
B. Specific	II - 2
22. LAKES, STREAMS AND SWAMPS	II - 9 to II - 10
A. General	II - 9
B. Specific	II - 9
23. VEGETATION	II - 10 to II - 11
A. General	II - 10
B. Specific	II - 11
24. SEASONAL CHANGE	II - 11 to II - 12
A. General	II - 11
B. Specific	II - 11
25. CRITICAL AREAS	II - 12 to II - 13
A. General	II - 12
B. Specific	II - 13
26. ROUTES TO CRITICAL AREAS	II - 13 to II - 30
A. General	II - 13
B. Specific	II - 13

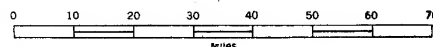
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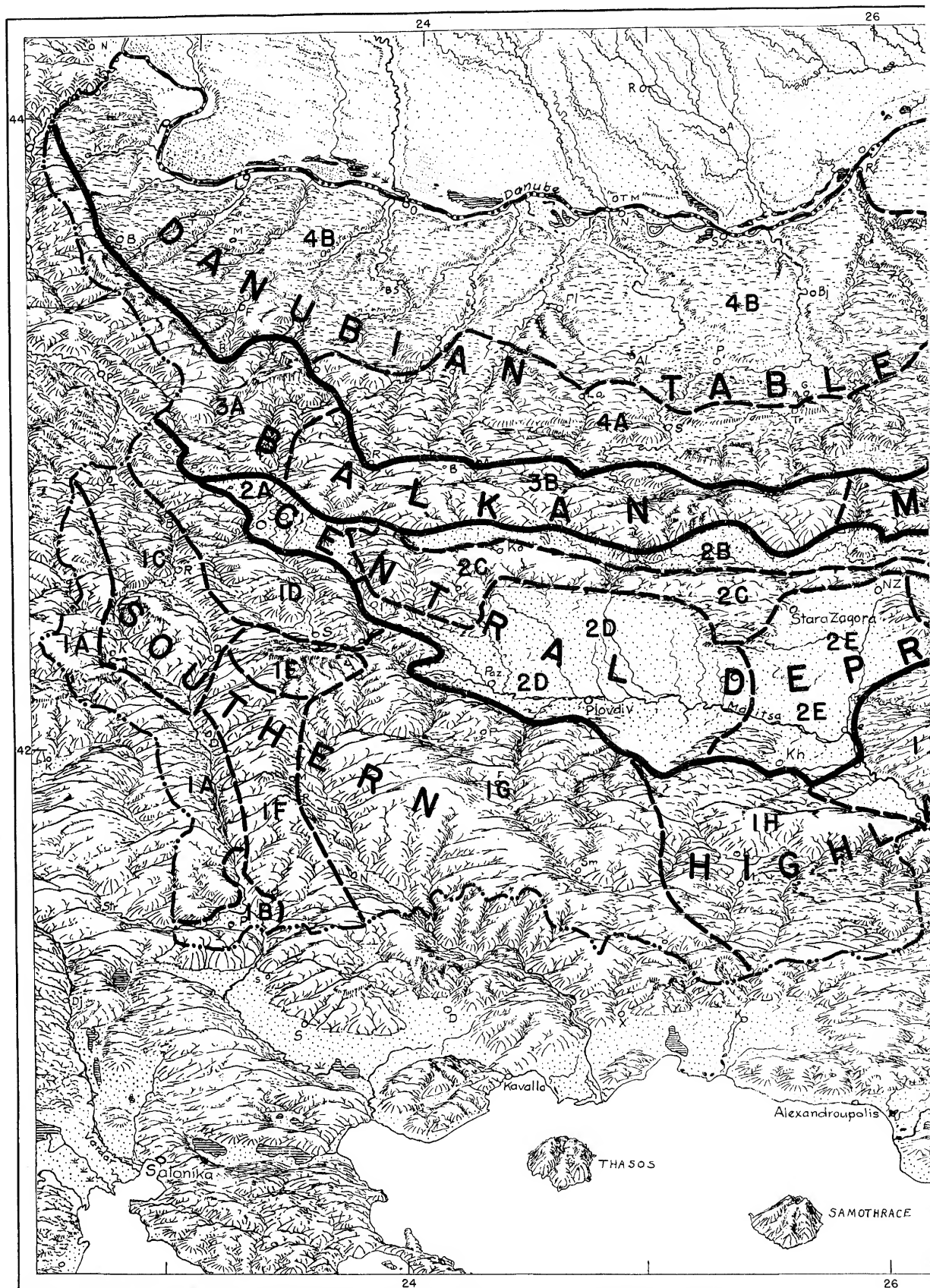


BULGARIA

TERRAIN REGIONS

- 1 SOUTHERN HIGHLANDS
 - A Southwestern Mountains
 - B Struma-Strumitsa Basin
 - C Upper Struma Basins
 - D Vitosha Planina
 - E Rila Planina
 - F Pirin Planina
 - G Central Rhodope
 - H Eastern Rhodope
 - I Sakar - Strandza Hills
- 2 CENTRAL DEPRESSION
 - A Sofia Basin
 - B Sub-Balkan Basins
 - C Sredna Gora (Anti-Balkans)
 - D Plovdiv Basin
 - E Zagora Basin
 - F Middle Tundzha Basin
 - G Burgas Basin
- 3 BALKAN MOUNTAINS
 - A Western Balkans
 - B Central Balkans
 - C Eastern Balkans
- 4 DANUBIAN TABLELANDS
 - A Balkan Foothills
 - B Northern Plateau
 - C Deli Orman
 - D Varna-Kamchiya Region





Chapter II

Page II - 1

MILITARY GEOGRAPHY

20. General Description

A. Regional summary.*

REGION	RELIEF	DRAINAGE	PREDOMINANT VEGETATION	NATURAL WATER SUPPLY	SEASONAL CHANGE
(1) Southern Highlands.					
(a) <i>Southwestern Mountains</i>	North-south ridge with numerous spurs.	Torrents draining into Struma.	Open forest and pasture.	Springs, intermittent streams.	Moderate.
(b) <i>Struma-Strumitsa Basin</i>	Flat-floored basin with steep adjacent slopes.	Sluggish Struma and Strumitsa Rivers.	Cultivated fields.	Wells and streams.	Moderate.
(c) <i>Upper Struma Basins</i>	Rugged hills and small basins.	Tributaries of Struma, largely entrenched.	Fields, orchards, pasture, woodland.	Springs, streams, wells.	Moderate.
(d) <i>Vitosha Planina</i>	Generally rounded ridge trending northwest.	Torrents draining into Iskr and Struma.	Forest and pasture.	Small springs.	Great.
(e) <i>Rila Planina</i>	Alpine east-west ridge.	Torrents draining into Struma, Iskr, and Maritsa.	Forest and pasture.	Springs and streams.	Great.
(f) <i>Pirin Planina</i>	Rugged north-south ridge.	Torrents draining into Struma and Mesta.	Pasture and forest.	Springs and streams.	Great.
(g) <i>Central Rhodope (Rodopi)</i>	Steep rounded ridges with a few basins.	Mesta and Maritsa tributaries generally in gorges.	Forest and pasture.	Springs and streams.	Moderate.
(h) <i>Eastern Rhodope (Rodopi)</i>	Rounded hilly ridges.	Perennial streams flowing into Arda.	Pasture, fields, woodland.	Streams and springs.	Moderate.
(i) <i>Sakar-Strandzha Hills</i>	Rugged hill country.	Numerous streams in ravines.	Pasture, woodland, fields.	Streams, wells (uplands droughty).	Moderate.
(2) Central Depression.					
(a) <i>Sofia (Sofya) Basin</i>	Flat to undulating mountain-enclosed plain.	Sluggish marsh-bordered streams.	Fields and marsh grass.	Streams, wells.	Great.
(b) <i>Sub-Balkan Basins</i>	Small basins separated by hilly divides.	Each basin drained southward by unconnected streams.	Fields, orchards, pasture.	Streams, wells.	Moderate.
(c) <i>Sredna Gora</i>	Low east-west range.	Numerous small streams flowing north-south.	Forest, pasture.	Springs, streams.	Moderate.
(d) <i>Plodiv Basin</i>	Extensive plain, rolling along northern edge.	Drained by sluggish middle Maritsa system.	Grainfields, pasture.	Streams, wells.	Moderate.
(e) <i>Zagora Basin</i>	Undulating plains.	Numerous streams converge southward.	Fields, pasture, woods.	Streams, wells.	Moderate.
(f) <i>Middle Tundzha Basin</i>	Rolling basins, marshy valley troughs.	Sluggish Tundzha drainage.	Fields, orchards, woods.	Streams, wells.	Moderate.
(g) <i>Burgaz Basin</i>	Hills and marshy lowlands.	Short, sluggish streams converge on Burgaz Gulf.	Fields, pasture, woods.	Springs, shallow wells.	Very moderate.
(3) Balkan Mountains (Stara-Planina).					
(a) <i>Western Balkans</i>	Rounded ridge trending southeast.	Streams drain northeast into Danube.	Open forest, pasture.	Springs and streams.	Very great.
(b) <i>Central Balkans</i>	Mountain block with steep southern slope.	Streams drain north into Danube.	Forest, pasture.	Springs and streams.	Great.
(c) <i>Eastern Balkans</i>	Low, parallel east-west ridges.	Streams flow east into Black Sea.	Forest, pasture, fields.	Springs and streams, wells in valley bottoms.	Moderate.
(4) Danubian Tablelands.					
(a) <i>Balkan Foothills</i>	Rounded east-west hills, small basins.	Rivers flow north. Tributaries east-west.	Dense forest, pasture, fields.	Streams, wells (uplands dry).	Great.
(b) <i>Northern Plateau</i>	Low tableland compartmented by troughs.	Winding streams flow northward.	Grassland, grainfields.	Streams, wells (scanty supply on upland).	Very great.
(c) <i>Delhi-Orman</i>	Rolling hills.	Few streams except on margins.	Grassland, scrub forest, grainfields.	Wells (supply scanty).	Great.
(d) <i>Varna-Kamchiya Region</i>	Hilly uplands with marshy east-west troughs.	Sluggish rivers flow into Black Sea.	Woods, fields, pasture.	Small springs, streams.	Moderate.

*The spellings *Sofia*, *Balkan Mountains* (Balkans), and *Rhodope Mountains* (Rhodopes) are used in the maps and text of Chapter II. These spellings have been used on many G.S.G.S. maps and in the S.E.S. No. 83, Volume 2, *Terrain Intelligence*, prepared by the U. S. Geological Survey. The spellings, *Sofya*, *Stara-Planina*, and *Rodopi* are used in some chapters of this volume. Where space permits both versions are given in the following text.

21. Relief

A. General.

Bulgaria is a land of moderately rugged mountains, lowland and highland basins, and low plateaus. Its major features trend west-east and form major corridors. Minor features such as passes and valleys trend roughly north-south and form more constricted corridors.

Bulgaria is conveniently divided into four east-west belts or regions. (Figure II - 1.) Southernmost is the Southern Highlands Region which extends from the southwestern border to the Black Sea. The ranges of these mountains trend east-southeast and are characterized by gorges, steep slopes, rounded uplands, and high passes. The mountains become lower and less rugged toward the east. North of the Southern Highlands is the Central Depression, a series of basins of varied sizes and altitudes. East of Sofia (Sofiya) the Southern Highlands and the Balkan Mountains (Stara-Planina) come together and almost pinch the Central Depression into two sections, high upland basins to the west and low basins to the east. North of the Central Depression the rounded ridges of the Balkans extend nearly 400 miles from the Yugoslav border to the Black Sea. These mountains average 18 miles in breadth and are highest where they are narrowest, north of Plovdiv. The Balkan Mountains descend gradually to the Danubian Tablelands, partly a plateau and partly a hilly area, which extends northward and eastward to end abruptly with cliffs along the Danube River and the Black Sea.

The four major regions may be subdivided into the following subregions:

- (1) SOUTHERN HIGHLANDS
 - (a) Southwestern Mountains
 - (b) Struma-Strumitsa Basin
 - (c) Upper Struma Basins
 - (d) Vitosha Planina
 - (e) Rila Planina (Rila Range)
 - (f) Pirin Planina (Pirin Range)
 - (g) Central Rhodope (Central Rodopi)
 - (h) Eastern Rhodope (Eastern Rodopi)
 - (i) Sakar-Strandzha Hills
- (2) CENTRAL DEPRESSION
 - (a) Sofia (Sofiya) Basin
 - (b) Sub-Balkan Basins
 - (c) Sredna Gora (Anti-Balkans)
 - (d) Plovdiv Basin
 - (e) Zagora Basin
 - (f) Middle Tundzha Basin
 - (g) Burgaz Basin
- (3) BALKAN MOUNTAINS (Stara-Planina)
 - (a) Western Balkans
 - (b) Central Balkans
 - (c) Eastern Balkans
- (4) DANUBIAN TABLELANDS
 - (a) Balkan Foothills
 - (b) Northern Plateau
 - (c) Deli Orman
 - (d) Varna/Kamchiya Region

B. Specific.*

(1) Southern Highlands.

(a) *Southwestern Mountains.* These rugged mountains with rounded summits form a continuous ridge along the Yugoslav-Bulgar frontier from the Strumitsa River to a point west of Kyustendil. Everywhere the border is above 3,000 feet and is well suited for a defensive line. The approach from the Yugoslav side is more moderate than from the Bulgar side. On the latter slope, steep finger-like ridges separated by narrow valleys extend almost to the banks of the Struma and impede movement along its western banks. (Illustration II - 1.) At 41° 45' N the largest of these ridges extends westward to the Pirin Planina (Pirin Range) and is cut through by the Struma to form the steep, narrow Kresna Gorge. (See Illustration VII - 35.)



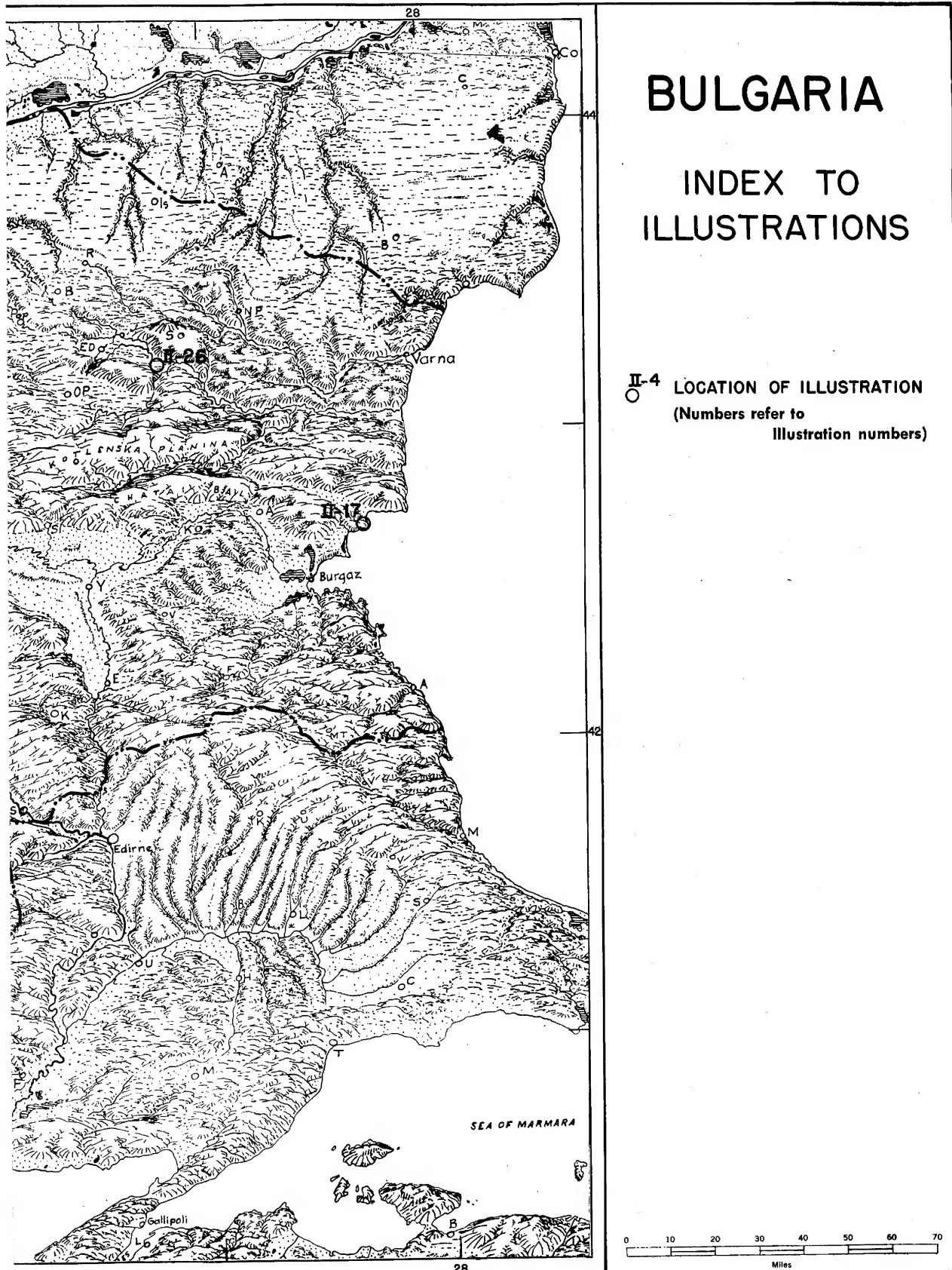
Illustration II - 1. Southwestern Mountains.

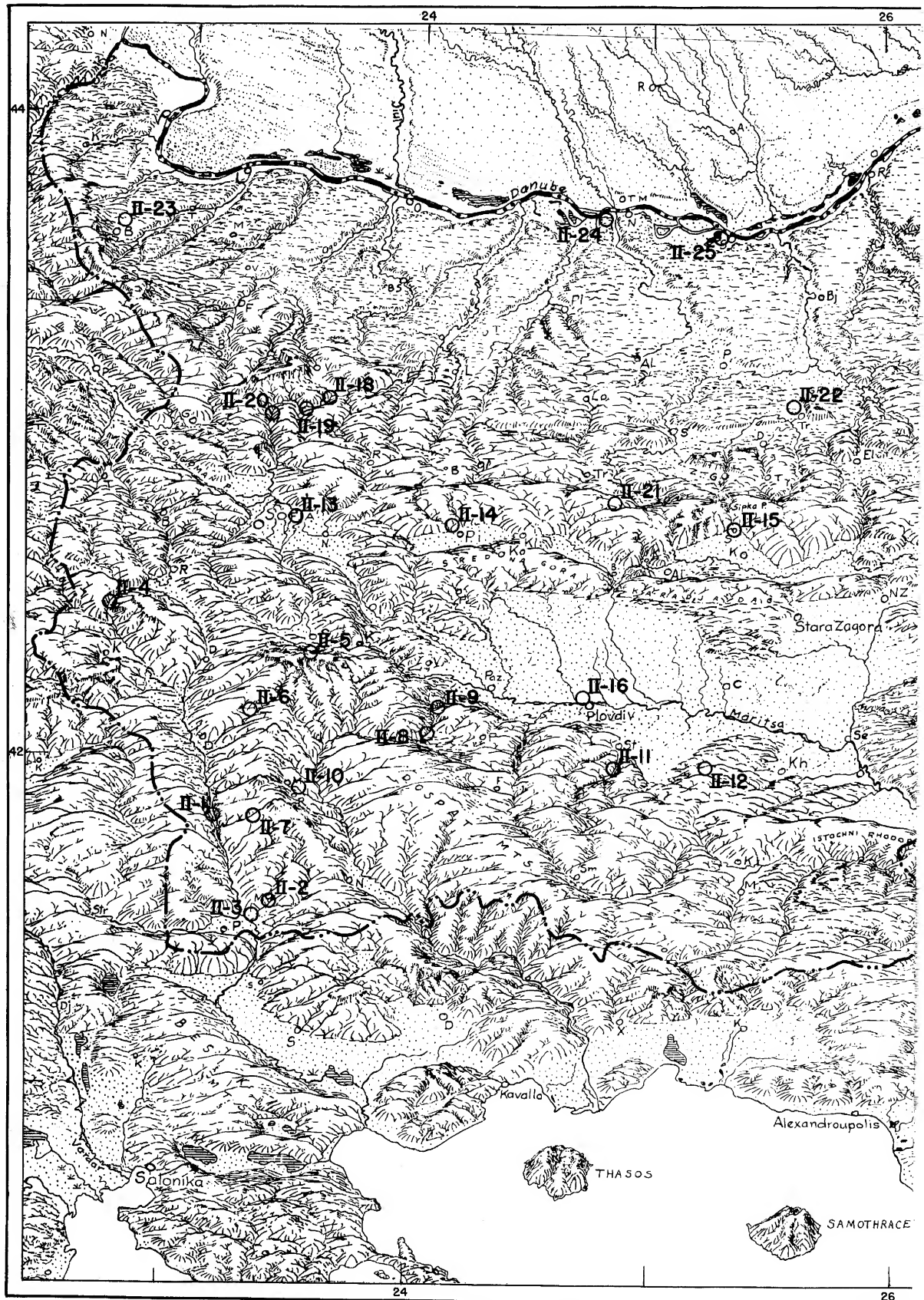
Defile on Struma River near Kresna. The stream here is closely followed by the road and railroad.

(b) *Struma-Strumitsa Basin.* This two-pronged basin separates the Southwestern Mountains from the Pirin Planina which flanks it to the west. The Struma flows southward along the western edge of the northern prong and leaves the basins by cutting the Rupel Gorge through a western spur of the Pirin Planina. The flat floor of the Struma Valley is narrow (averaging one-half mile in width), and in places is marshy. Its western edge is steep. To the east is a rolling country of southwest-trending ridges, each several hundred feet high, extending to the Pirin Planina. These ridges dominate the valley floor and provide a series of defensive lines transverse to the Struma. The Strumitsa valley forms the western prong of the basin. The river flows close to the north-

*The major regions will be described in order from south to north. Within each major region the subdivisions are described in order from west to east.

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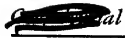


Illustration II - 2. Struma-Strumitsa Basin.
View from a tributary valley of the basin
east toward the Pirin Planina.

ern edge of its three-mile-wide valley. The valley floor slopes gently northward. Mountains rise abruptly to the north and south and command this easy corridor to southern Yugoslavia. (See Illustrations II - 2 and II - 3.)

(c) *Upper Struma Basins.* North of 42°, the Struma Valley broadens and the river and its tributaries drain a hilly country amid which are numerous basins. Each basin is surrounded by hills which have rolling uplands but steep sides. The approaches to the basins are usually through defiles although the country is rarely so rugged as to prevent deployment. The basins themselves are higher and larger as the headwaters are approached. Their floors are rarely flat except near the streams. Usually they are broken by undulating hills which are most commonly oriented northwest-southeast. (Illustration II - 4.)



Illustration II - 4. Upper Struma Basins.
Gorge of the Struma River between Radomir and Kyustendil.

(d) *The Vitosha Planina (Vitosha Range).* This is a rounded ridge, rising to over 7,000 feet, which separates the Upper Struma Basins from the Sofia Basin. The ridge is mountainous for only 15 miles, elsewhere it is a low hilly divide with steep lower slopes. Its surface is generally rounded except for the rugged summit and for cliffs along the north-eastern slopes.

(e) *Rila Planina (Rila Range).* (Illustration II - 5.) These craggy mountains are the highest and most rugged in Bulgaria. Their sharply-cliffed slopes rise abruptly to over 8,000 feet and form an east-west barrier extending 35 miles. The main gap is through a narrow gorge south of Samokov. East of this gap rises Musala (Mousalla) (9,500 feet), the highest peak. Farther east the range is lower and less rugged.

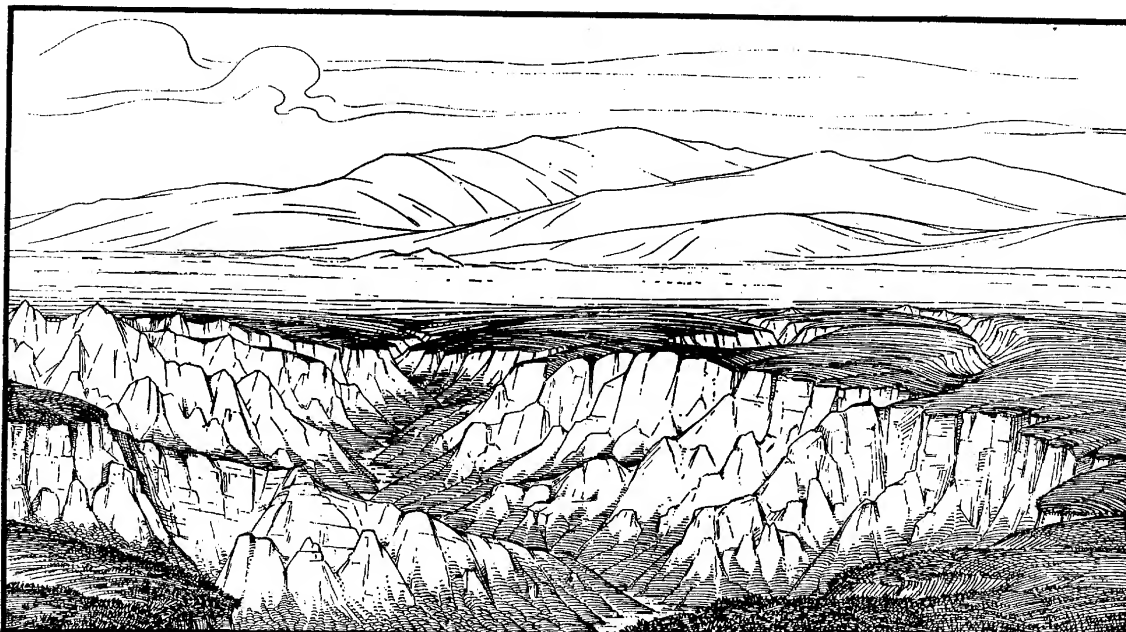


Illustration II - 3. Struma-Strumitsa Basin.
View toward Pirin Planina. The eastern side of the basin includes a terrace
which has been gullied by streams flowing toward the Struma.



Illustration II - 5. Rila Planina.

The range as it appears from the Samokov Basin, a small plain enclosed between the Rila and Vitosha ranges and drained by the headwaters of the Iskr.

(f) *Pirin Planina (Pirin Range)*. (Illustrations II - 6 and II - 7.) These mountains extend south and southeastward from the Rila Planina and form a high divide between the Mesta and Struma watersheds. A steep spur range, 2,000 to 5,000 feet high, extends westward where it is known as Belasitsa Planina. This spur is cut by the Struma at Rupel Pass. The Pirin Planina consists of steep-sided mountains rising 5,000 to 9,000 feet. These crest levels are interrupted by broad gaps west of Razlog, Nevrokop and at Rupel Pass. They lack high continuous cliffs and therefore are not such an effective obstacle as the Rila Planina.

(g) *The Central Rhodope (Rodopi)*. (Illustrations II - 8



Illustration II - 6. Pirin Planina.

A valley in the northwestern foothills of the range.



Illustration II - 7. Pirin Planina.

High alpine peaks characteristic of the crest of both the Pirin and Rila ranges. Below the treeline is a dense growth of pine and fir.

to II - 11.) East of the Pirin the Southern Highlands are lower and consist of rounded, 6,000-foot-high ridges among which streams flow through alternate basins and gorges. The major corridor through this area is the Mesta Valley from whose headwaters movement northeast to the Maritsa Valley is only moderately difficult. Another corridor crosses a divide on the Greek border north of Xánthi into the Arda Valley, thence crosses the 6,500-foot Bukova Range to the Stanimashka Valley along which is open hilly terrain to the Central Depression.



Illustration II - 8. Central Rhodope.

Canyon of the Elli Dere southwest of Pazardzhik. Such defiles are common in the Central Rhodope.



Illustration II - 9. Central Rhodope.

Northern foothills of the Central Rhodope showing a more open portion of the Elli Dere Valley.



Illustration II - 10. Central Rhodope.

The town of Dobrinishta at the southern edge of the Razlog Basin, characteristic of the small basins in the Central Rhodope



Illustration II - 11. Central Rhodope.

The most rugged aspect of the Rhodope near Backovo. Footbridge in foreground.

(b) *The Eastern Rhodope (Rodopi)*. East of 25° E. the Rhodope consist of rounded hills, rising 1,000 to 2,000 feet. There are numerous wide valleys opening to the east and northeast. These mountains rise to 3,000 feet only along the Greek frontier where they are a significant obstacle. (Illustration II - 12.)



Illustration II - 12. Eastern Rhodope.

This part of the Rhodope is less rugged than to the west. The Central Depression appears to the north in the background.

(i) *Sakar-Strandzha Hills*. From the Maritsa to the Black Sea a band of rugged hill country extends along the Turkish border. This area consists of ridges, 1,000 to 2,000 feet high which trend most commonly toward the northwest. The



Illustration II - 13. Sofia Basin.

The Iskr River meanders across the Sofia Basin. Trees are not characteristic of the basin except near streams.

uplands are rounded and the ruggedness of the country arises from the numerous shallow gorges in which the streams flow.

(2) *Central Depression.*

(a) *The Sofia (Sofiya) Basin*. This is an elongated depression extending 46 miles northwest-southeast. Northeast of Sofia the basin is flat and marshy. (Illustration II - 13.) West of Sofia it is undulating and well drained. The lower parts of the basin are about 1,700 to 2,000 feet high and are surrounded by rounded hills which are 2,500 to 3,500 feet high. Except in the marshy area, movement within the basin is easy. Except through the Balkan Mountains to the north, corridors for rapid movement are available in almost every direction.

(b) *The Sredna Gora (Anti-Balkans)*. These form a long and discontinuous east-west rampart which separates the Sub-Balkan basins from the upper Maritsa and Stara-Zagora basins. This mountain belt is 15 miles wide and rises to 5,000 feet in the west but is only four to five miles wide and 3,000 feet high north of Stara-Zagora. These rounded mountains are steeper on the north than on the south. They are crossed



Illustration II - 14. Sub-Balkan Basins.

Pirdop Basin, looking east in the western portion of the Sub-Balkan Basins. The Sredna Gora appears in the right background.

by roads, railroads, and rivers and are not therefore a major obstacle. In the west the main ridge is adjoined by spurs which extend northwest toward the Balkan Mountains and southeast into the Upper Maritsa Basin. North of Plovdiv the range narrows and a mile-wide valley has been cut across it by the Strema River. Eastward the mountain belt again widens to over ten miles but includes mainly rolling hills whose summits rarely exceed 3,000 feet. North of Stara-Zagora the range again narrows and road and railroad cross it at 1,500 feet. Eastward the range continues narrow and its ridge is generally below 2,000 feet. South of Sliven the range appears only as low hills which disappear altogether near Yambol.

(c) *The Sub-Balkan Basins.* These form a series of basins between the Sredna Gora and the Balkan Mountains (Stara-Planina). Each basin is separated from its neighbor by hills, each is drained by rivers which cut south through the Sredna Gora toward the Maritsa. The westernmost basin, the Zlatitza Basin, is 19 miles long and $2\frac{1}{2}$ miles wide. (Illustration II - 14.) It is separated from the Sofia Basin by a ridge 3,000 feet high. The basin surface is rolling to hilly and is cut into north-south strips by tributaries of the Topolnitsa. A rounded upland separates the Zlatitza Basin from the larger, lower and flatter Karlovo Basin. The latter basin is 20 miles long, $4\frac{1}{2}$ miles wide and has an average altitude of 1,000 feet. The southern part of the basin is flat and includes

the several channels of the Strema River, while the northern part of the basin is undulating. A low pass, in which is the town of Kalofer, separates the Karlovo Basin from the Kazanlk Basin, 44 miles long and five to seven miles wide. (Illustration II - 15.) The Tundzha River winds along the flat southern floor of this basin. The northern half is undulating and is subdivided by a multitude of south-flowing tributaries of the Tundzha. The Tundzha flows through a narrow valley from the eastern end of this basin into the triangular Sliven Basin, 35 miles long, one to ten miles wide and 400 to 600 feet wide. The terrain is undulating except for a few marshy areas along the rivers, e.g., northeast of Straldzha.

(d) *The Plovdiv Basin.* (Illustration II - 16; see also Illustration VI - 10.) The basin is an elliptical depression, 100 miles long and as much as 30 miles wide. The basin is approached everywhere through defiles or over rugged hills except from the northeast where the divide is undulating. The approach from the Sofia Basin (Sofiya Basin) may be over one of two passes, 2,700 feet and 3,400 feet high respectively. The Maritsa Basin is marshy in the center where the streams meander over wide areas of gravel and swamp. Along the Maritsa a wide band of rice fields greatly restricts north-south movement. South of this marshy belt a seven- to ten-mile strip of undulating land extends to the foot hills of the Rhodopes. North of the ricelands an undulating steppe extending to the foothills of the Balkans is



Illustration II - 15. Sub-Balkan Basins.

Kazanlk Basin, looking north toward Balkan Mountains and toward approach to Shipka Pass. (See Illustration VII - 24.)



Illustration II - 16. Plovdiv Basin.

The city of Plovdiv is located where granite hills rise above the generally flat basin. Illustration II - 14 is similar to the more rolling northern areas in the Plovdiv and Zagora basins.

compartmented by streams flowing south-southeast. These streams are an appreciable obstacle only when in flood and where banks are marshy.

(e) *The Zagora Basin.* A rolling north-south divide along longitude 25° 25' E separates the marshy Plovdiv Basin from the better drained Zagora Basin. In the latter basin many torrential streams converge on the Sazle Dere (Sazlika), a tributary of the Maritsa. Between these torrent beds are long, rolling divides which appear increasingly conspicuous as the Sazle Dere (Sazlika) is approached. Near the Sredna Gora (Anti-Balkans) this basin is relatively flat. The valley of the Sazle Dere is wide enough and flat enough to provide a corridor.

(f) *The Middle Tundzha Basin.* A single ridge curving from Nova-Zagora southeast to the Sakar Planina separates this basin from Zagora Basin. The Tundzha Basin is more rolling than the two basins described immediately above. Its upland surface is subdivided by swampy stream valleys bordered by bluffs. The northern edge of the basin merges imperceptibly into the Sliven Basin.



Illustration II - 17. Burgaz Basin.

The Black Sea coast looking northeast toward the village of Nesebr (Messembria). Note the marshy area (left background) which is characteristic of the Burgaz Basin.

(g) *The Burgaz Basin.* This is the eastern end of the Central Depression. From the surrounding hills, streams converge upon the Gulf of Burgaz ending there in long, narrow marshes or estuaries. (Illustration II - 17.) Each stream valley provides a narrow corridor commanded by the adjacent uplands. To the south and north cross-country

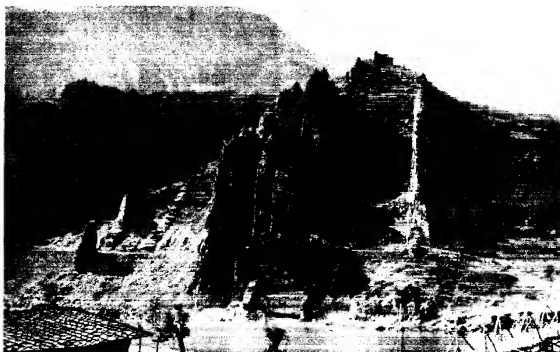


Illustration II - 18. Balkan Mountains.

The Iskr River near the northern edge of the Balkan Mountains, probably looking west.

movement from the basin would be difficult and toward the west it would be easy.

(3) *Balkan Mountains (Stara-Planina).*

(a) *Western Balkans.* West of Sofia the Balkan Mountains are rounded and range in height from 2,000 to 6,500 feet. A single ridge with spurs extends along the Yugoslav border and rises gradually southward to 5,000 feet where the border (and ridge) turn southeastward. Thence the ridge continues high to the Petrokhan (Gintsi) Pass (3,299 feet) beyond which the low, broken Vrachanska Planina extends eastward. To the south and east of this range the narrow gorge of the Iskr separates the Western Balkans from the Central Balkans. (Illustrations II - 18, II - 19 and II - 20.)

(b) *The Central Balkans.* These mountains extend 160 miles from the Iskr Gorge to north of Nova-Zagora. The



Illustration II - 19. Balkan Mountains.

Gorge of Iskr River near northern edge of mountains. Steep sides but rolling summits are characteristic of these mountains.



Illustration II - 20. Balkan Mountains.

Another view of the defile of the Iskr, probably looking south or southwest.

range consists mainly of a single ridge with gentle slopes to the north and steeper slopes to the south. Cliffs and very steep slopes are uncommon except in the valleys cut by torrents into the southern slope. The ridge subdivides at its western end where spurs extend southwest toward the Sredna Gora, west toward Sofia (Sofiya) and northwest toward the Western Balkans. The Arabakonak Pass (3,123 feet), Ribarski Pass (6,786 feet), Troyan Pass (5,415 feet), Rozalitsa Pass (6,332 feet), Shipka Pass (4,363 feet), (See Illustration VII - 24) and Trevna Pass (3,170 feet), offer possible crossings of the range. Most of these crossings are narrow, hence the Central Balkans offers a good defensive phase line. (Illustration II - 21.)



Illustration II - 21. Balkan Mountains.

View from the southern edge of the Balkan foothills looking south toward the highest peak of the Central Balkans (about 7,873 feet).

(c) *The Eastern Balkans.* These are lower and are subdivided into two or more parallel ridges among which occur rolling areas. The elevations are lower east of Sliven and the country consists of bold hills rather than mountains. The strength of the Eastern Balkans as a defensive line arises from the paucity of roads rather than from the amount of the relief.

(4) *Danubian Tablelands.*

(a) *Balkan Foothills.* These hills are a transition zone between the Northern Plateau and the Balkan Mountains (Stara-Planina). The hills trend east-west and form discontinuous ridges which parallel the Balkans. The major streams cut across the grain of the terrain; the tributaries parallel the ridges. The streams are not usually marshy nor deeply entrenched. The rolling to hilly terrain is better suited for maneuver than either the plateau to the north or the Balkans to the south. (Illustration II - 22.)

(b) *Northern Plateau.* This undulating area slopes gently toward the Danube. The river cuts against the plateau to form cliffs or bluffs as high as 400 to 600 feet. The strength of the Danube as a defensive line is increased by the swampy zone adjacent to the river, especially on the Rumanian shore. Southward the entrenched, winding tributaries of the Danube divide the plateau into north-south compartments, each approximating ten miles in width. The stream valleys are swampy and are easily defended against westward attacks because each valley has a steep eastern slope which rises 300 to 600 feet above the valley floor. (Illustrations II - 23, II - 24 and II - 25.)



Illustration II - 22. Balkan Foothills.

Looking north downstream near Gorna Orekhovitsa toward the Northern Plateau. This view is characteristic of many of the defiles in northern Bulgaria.

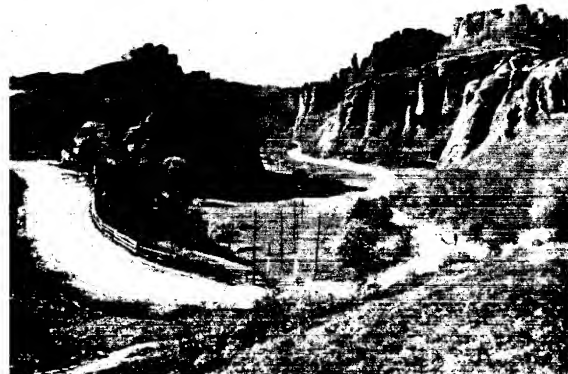


Illustration II - 23. Northern Plateau.

A defile near Belogradchik. Balkan Mountains visible in background. View probably looking southwest.



Illustration II - 24. Northern Plateau.

The shores of the Danube showing high bluffs rising abruptly from the Bulgarian bank. View probably looking east.

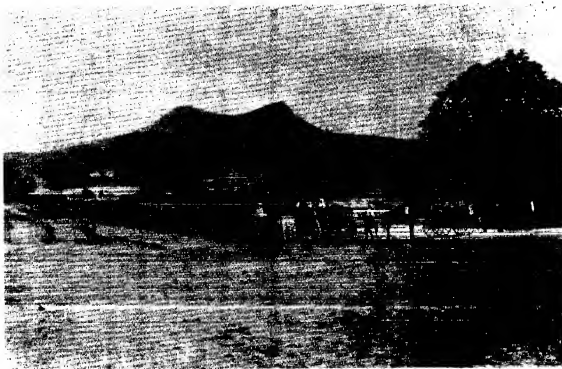


Illustration II - 25. Northern Plateau.

Low basaltic hill rising above the general level of the undulating plateau.

(c) *The Deli Orman.* This rolling upland is generally 1,000 to 1,500 feet high. It is almost lacking in streams, hence it is not compartmented as is the Northern Plateau to the west.

(d) *The Varna-Kamchiya Region.* The region consists of undulating hills and plateaus 500 to 1,000 feet high, which are divided into three east-west blocks by the two-mile-wide marshy valleys of the Provadiska and Kamchiya Rivers. Movement east-west is relatively easy, while north-south it is relatively difficult. (Illustration II - 26.)



Illustration II - 26. Danubian Tablelands.

Aerial view of fields near Preslav. This field pattern with scattered trees and bushes is characteristic of the undulating portions of the eastern Danubian Tablelands.

22. Lakes, streams and swamps

A. General.

Bulgaria is characterized by a close network of streams which, in the basins, are commonly bordered by swamps. (Figure II - 3.) These streams are extremely irregular in flow and during the summer droughts are commonly fordable except in their lower courses. Most of southern Bulgaria is drained to the Aegean by the Struma, Mesta, and Maritsa systems. Most of northern Bulgaria is drained to the Black

Sea through the Danube system. A zone 40 to 50 miles wide drains directly into the Black Sea through many short rivers.

B. Specific.

(1) Southern Highlands.

(a) The northern edge of these mountains is drained by the Maritsa which cuts a shallow gorge across them near Edirne. The southern edge is drained by the Struma and Mesta Rivers and tributaries of the lower Maritsa. The streams which rise in these mountains are torrents whose flow is greatly affected by the rains and melting snows of spring, the drought of late summer and the autumn rains.

(b) *The Struma.* The river rises in the Central Depression. Through the Rhodopes (Rodopi) it flows in a narrow valley which in several places becomes a gorge. Where it passes through basins, its banks are commonly marshy, its bottom sandy or muddy. During flood the stream, often changes its course across the basins and leaves behind extensive areas of gravel. The Struma is generally 30 to 50 yards wide and rarely over four feet deep. Its tributaries in the Rhodopes, except for the Strumitsa, are insignificant torrents but may become impressive obstacles during floods.

(c) *The Mesta.* The Mesta River rises in the Rila Planina and flows for the most part through long gorges and small basins. At Nevrokop it flows through an extensive basin, then again enters a gorge. Its banks are so steep that the roads avoid the river. The stream is generally 50 to 65 yards wide, six feet deep and has a current of four to five miles per hour. However, in summer, the stream can be crossed on foot in many places.

(d) *Northern part of the Central Rhodope.* The area is to a large extent drained by streams which flow northward into the Maritsa. These streams flow through narrow wooded valleys and are less torrential than the south-flowing streams. The main streams have sufficient water to float logs. Their swift waters and steep sides make them difficult to cross in many places.

(e) *The Arda.* The Arda River flows eastward to the Maritsa. Its numerous tributaries drain most of the Eastern Rhodopes. The stream is a mountain torrent with a pebble bottom and has a current of five to eight miles per hour. It is fordable only at a few places.

(2) The Central Depression.

(a) This is largely drained by the Maritsa system. Its higher western end, however, is the divide between the Iskr and the Struma; its eastern end drains directly into the Black Sea. In general, its streams are mountain torrents near their headwaters but winding streams which may flood the adjacent countryside in the basins.

(b) *The upper Iskr.* This part of the river rises as a cluster of mountain torrents on the north slope of the Rila Planina. It cuts through several gorges before spreading out over the flat center of the Sofia Basin. There the river is joined by tributaries which come together in the marshy area north of Sofia. The river flows north through a deep winding gorge across the Balkan Mountains (Stara-Planina). Generally the stream is shallow but its alternating gorges and marshes make it a considerable barrier.

(c) *The Maritsa.* This large river rises in the wooded northern foothills of the Rhodopes as a turbulent mountain

stream which flows throughout the year. After leaving the hills its gradient is slight and it winds between low banks. Its southern tributaries have a relatively even flow; its northern tributaries (except the Topolnitsa) are almost dry in summer but become torrents after the melting snows or the rains. The middle Maritsa is a considerable obstacle because of marshes and rice fields which adjoin it. Its bed is sand, shingle or pebble. The stream is characterized by numerous islands, some of which are shifting sand banks, others permanent and tree-covered. The stream below Plovdiv is over 200 yards wide, three to six feet deep, and has a slight current except during floods. Below Borisovgrad the river flows in a mile-wide plain between bluffs which in a few places form almost a gorge.

(d) *The Tundzha*. This river is fairly typical of the northern tributaries of the Maritsa. It begins as a narrow mountain torrent in the Sub-Balkan Basins. After it turns south it has a width of 35 to 50 yards and a depth of from three to seven feet. During spring floods the depths increase to 10 to 15 feet but during summer drought the gravelly river bottom can be crossed by carts in many places. South of Yambol the stream is divided into several roughly parallel streams which wind in a trough several miles wide. Near Knyazhevo the trough becomes a shallow gorge where the Tundzha cuts through the hills which extend to the border.

(e) *The Burgaz Basin*. This basin is drained by sluggish, shallow streams which converge on the Gulf of Burgaz. Most of these flow in swampy troughs near their mouths. (Illustration II - 17.) Upstream they wind in shallow, narrow trenches. South of Sozopol the streams lack the swampy mouths and flow directly from narrow valleys into the sea.

(3) *The Balkan Mountains (Stara-Planina)*. The drainage of the Balkans consists mostly of the headwaters of streams which are described in detail under adjacent regions. In general, the southward-flowing streams are mountain torrents which flow in gulleys or canyons only after thaws or rains on the mountains. The northward-flowing streams are perennial and converge to feed the rivers of the Northern Plateau. In the Eastern Balkans the perennial southern branch of the Kamchiya rises in the center of the mountains, flows through a tortuous, and in places constricted, valley and cuts across the northern ridge of the Balkans.

(4) *The Danubian Tablelands.*

(a) The rivers which cross the plateau are fed by streams, usually torrents, rising on the plateau and streams rising in the Balkans, usually perennial. In most cases the streams are winding and entrenched and become more deeply entrenched downstream. The east banks are high and steep and are undercut by the streams. The west banks are low and flat and commonly bordered by marshy sediments. The streams flood in May and at that time change their beds and form new islands and channels. The principal streams are described below from west to east.

(b) *The Lom*. The Lom River rises in the Western Balkans and descends rapidly northeastward. It turns eastward and flows through a wide marshy valley. The stream is usually fordable.

(c) *The Ogosta*. The river rises near Boichinovtsi. It is a torrent in the headwaters but downstream enters an open valley, which is 2 to 2½ miles wide. Further downstream

there are short gorges at Erden and Lyuta. The stream is very shallow.

(d) *The Iskr*. This, the second largest river in Bulgaria, cuts a gorge through the Stara-Planina and debouches on the plain of Mezdra, southeast of Vratsa. It then enters another defile which extends to Reselets, where the valley widens. Below Chumakovtsi the valley is two miles wide and is in places marshy. The lower Iskr has a depth of five to six and one-half feet and is fordable only at Karlukovo, Chumakovtsi, Koinare, and Makhlata. (Illustrations II - 18 to II - 20.)

(e) *The Vitr (Vid)*. The river winds through a steep-sided narrow valley to Glozhene, thereafter its course alternates between narrow marshy valleys and constrictions. It is fordable in many places (almost everywhere by cavalry).

(f) *The Osm*. The Osm River is an extremely tortuous stream which flows northward, cutting across numerous ridges of east-west-trending hills. Near Lovech the stream winds through a narrow defile and then turns northeast. Its course to the Danube is a great bend northeast then northwest through a marshy, two-mile wide valley overlooked on the east by cliffs. The stream is too deep for fording and represents a considerable military obstacle.

(g) *The Yantra*. This rises near Shipka Pass, then flows through a narrow valley to Tnovo north of which it cuts through a defile. (See Illustrations V - 14 and VII - ??.) Beyond this it enters a wide valley into which flow tributaries with wide valleys from the east and west. The Yantra Valley is moderately wide and well drained to Bela, northward it is low and subject to flooding. The lower Yantra is 55 to 75 yards wide and 6 to 13 feet deep. Everywhere below Tnovo it is a good defensive line.

(h) *The Baniski (Russenski) Lom*. The river is formed by several winding streams flowing in narrow valleys. These streams are adjoined by limestone cliffs and therefore afford better defensive lines than their shallow depths suggest.

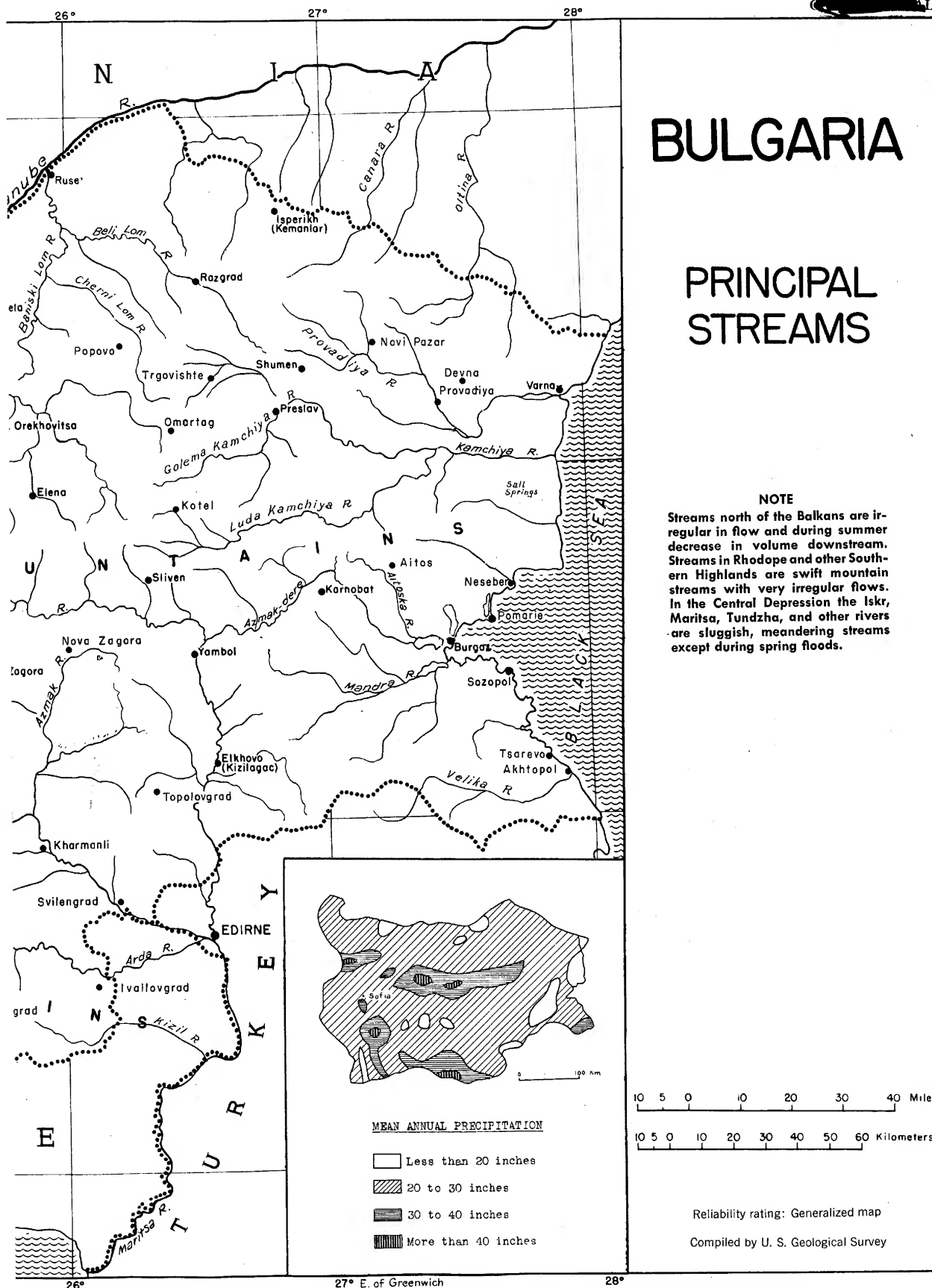
(i) *The Kamchiya and Provadiska*. These two rivers meander eastward to the Black Sea, through marshy troughs, one or two miles wide. The adjacent hills are not generally steep, and the marshes are discontinuous, hence these valleys afford only moderately strong defensive lines.

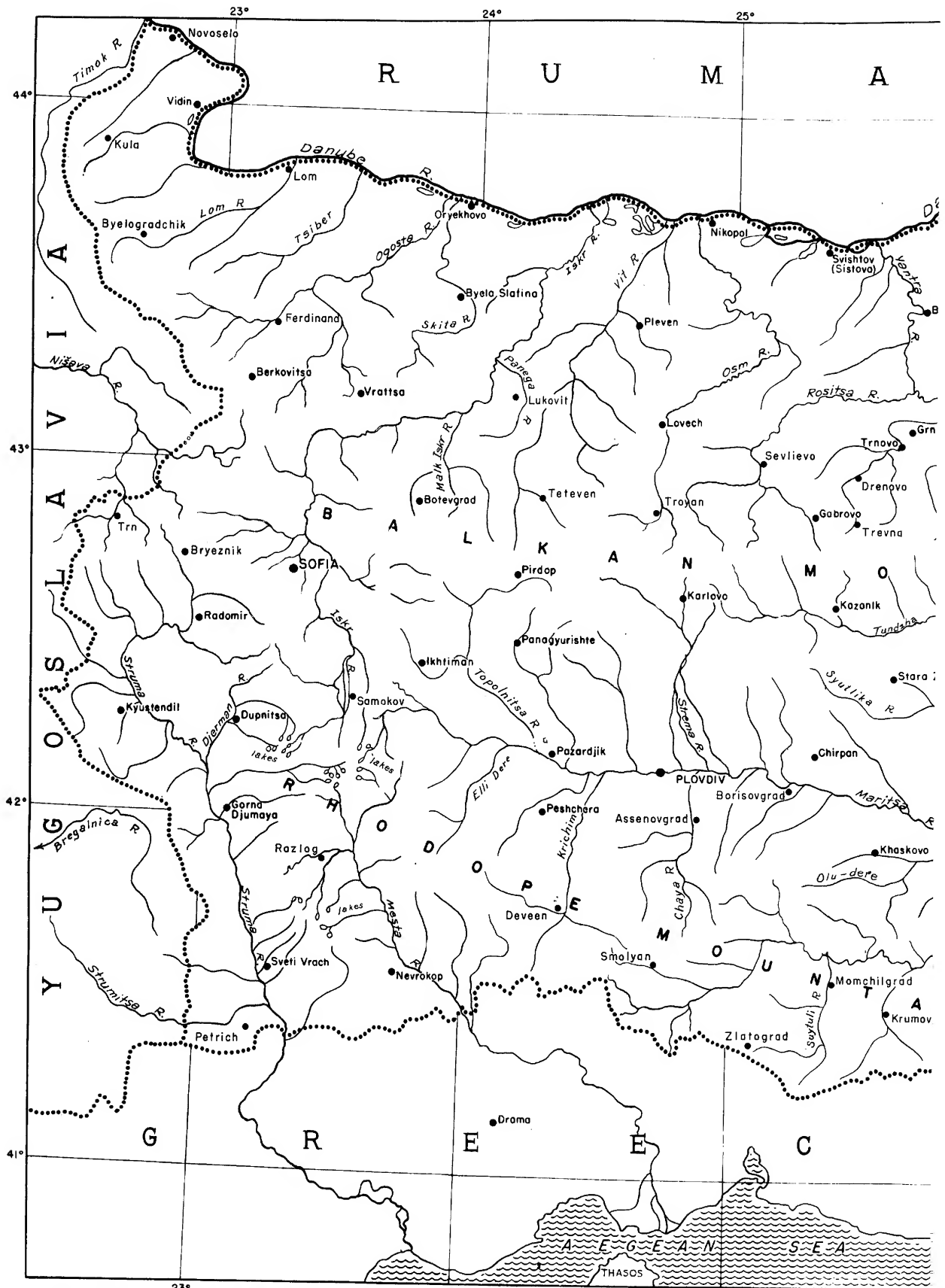
(5) *The Danube*. This river varies in width from 760 yards near Vidin to 2,400 yards north of its junction with the Tsihr. There are numerous islands in the river but most of them are marshy. The Danube varies considerably from season to season. The river is frozen over 77 winters out of 100 and the ice lasts an average of 39 days. The river rises in April and reaches 20 to 27 feet above low water in June. The stream is lowest in late summer or early autumn. The current averages 2½ miles per hour.

23. Vegetation

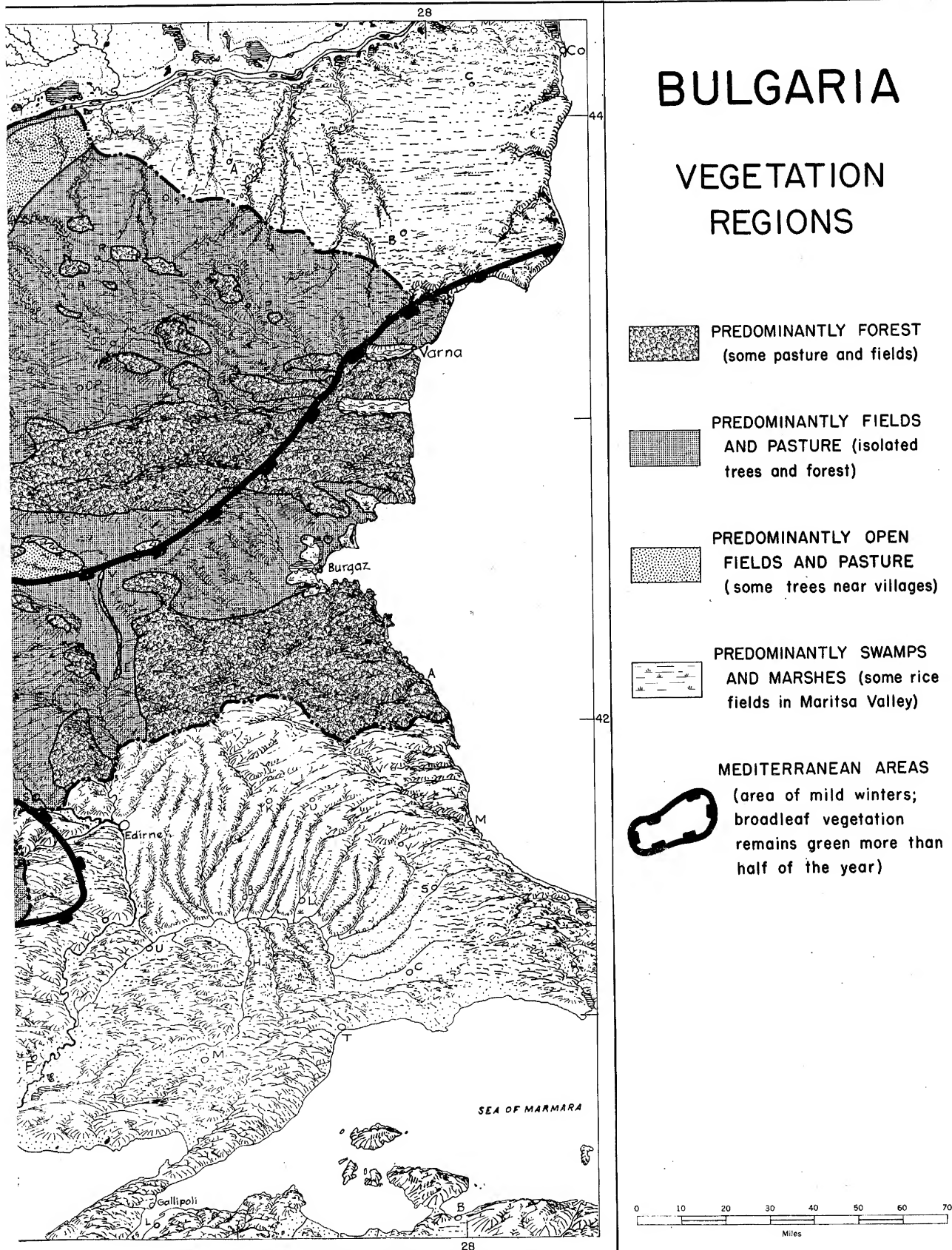
A. General.

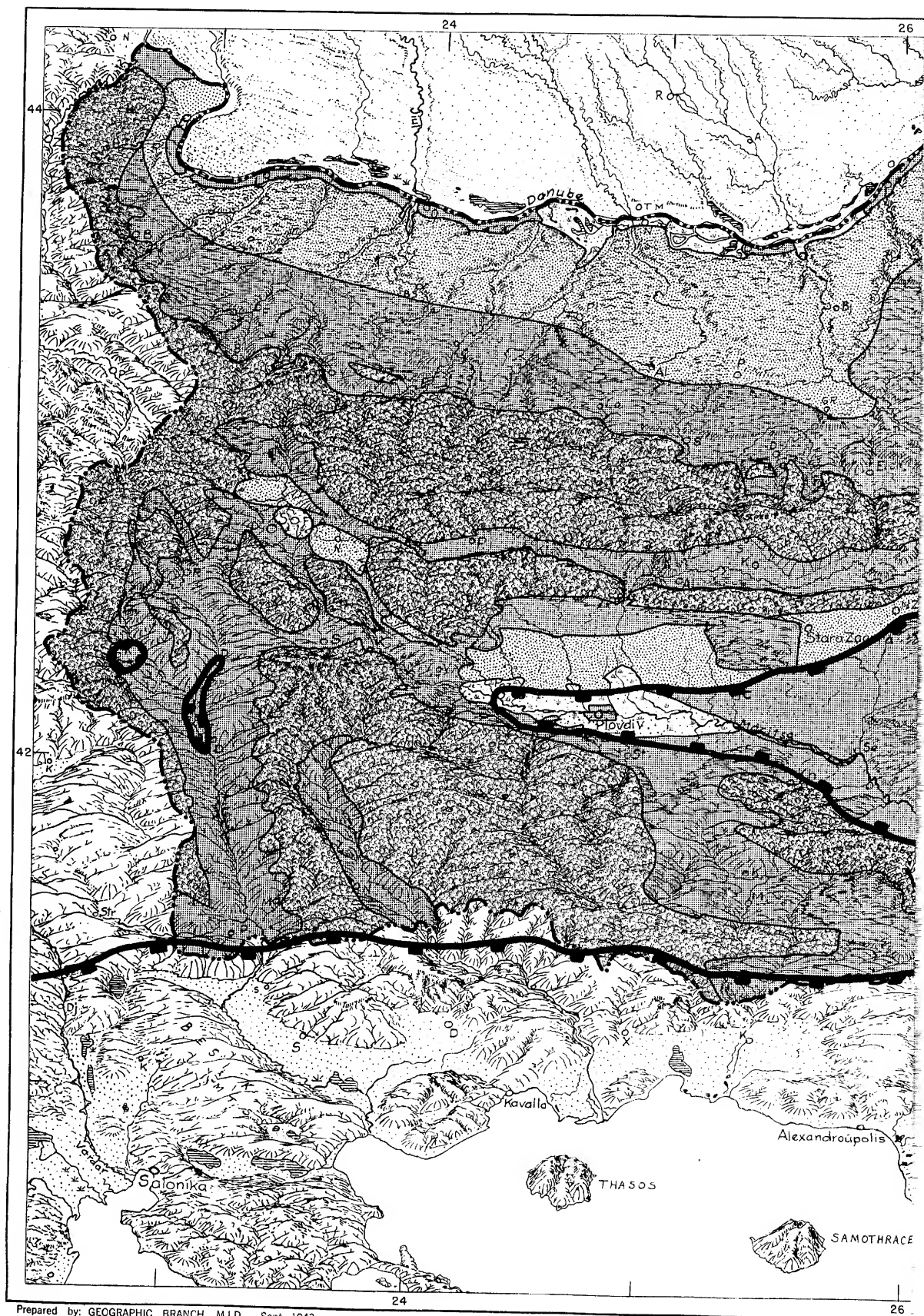
Approximately one-third of Bulgaria is forested. The remainder is almost equally divided between cultivated fields and pastures (meadow and scrublands). The forests are largely on the highlands and along the streams; pastures are on the lower slopes. The cultivated lands are in the valleys, the basins and on the rolling steppes of the Danubian Plateau. (Figure II - 4.)





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B. Specific.

(1) *Southern Highlands.* These are forested mountains with alpine pastures mixed with rocky wastes on the higher summits and with pasture in the clearings on the lower slopes. The forest is arranged in altitudinal layers. Above 4,000 to 4,500 feet pine and fir predominate. Between 3,000 and 4,000 feet beech is mixed with the pine and fir. Below 3,000 feet a hardwood forest of beech, elm, oak, and poplar predominates with oak and poplar becoming more common as the lower levels are reached.

The forests are generally open. Near the villages, especially, goats and other grazing animals have destroyed the undergrowth. Movement by infantry would be rarely impeded by the forest growth. Concealment is generally available except in the clearings, the rocky areas and near the summits. Fuel and forage are also available although in summer the forage may be scarce at lower altitudes. Soft woods for construction are scarce near the corridors of movement, but available high in the mountains. The principal streams are commonly used to flow timber from the uplands, hence logs may be found along the banks.

The valleys and basins are planted in grains (corn, oats, barley, rye), hay and garden crops. Vineyards, orchards and tobacco fields are common in the valleys at low altitudes. In most of the cultivated area local concealment is generally available from clumps of trees on the knolls, in the orchards or in rows of trees along the principal roads.

(2) *The Central Depression.* In contrast to the Southern Highlands, fields and pastures rather than forests predominate in this region. The hills and mountains within the region, such as the Sredna Gora, have the vegetation characteristics of the Rhodopes. Even within the cultivated areas, stretches of woodland, especially on hillocks or near swamps, break the monotony of the fields.

The pattern of vegetation varies in detail from one sub-region to another. The Sofia Basin is largely open and is covered by grainfields, pasture, and meadow with considerable marsh grass north of Sofia. The Sub-Balkan Basins Region is in wheat, vineyards, and, in the Kazanlk Basin, in rose gardens. The Plovdiv Basin is covered with marsh grass, ricefields, willows, and alders near the main streams; with grasslands, cornfields, and wheatfields on the uplands; and with woodland areas on the divides. The eastern portion of the Central Depression is a patchwork quilt of pasture, fields, orchards, and woodland with forests predominant in the southeast.

Some cover, concealment and fuel are locally available in every area, but the vegetation is ordinarily not thick enough to screen large troop movements except in the hills. Except in the marshy areas, the vegetation is little impediment to movement.

(3) *The Balkan Mountains.* The northern slopes of the Balkans are covered with a dense forest of oak and beech which are commonly accompanied by a thick undergrowth of shrubs and brambles. The southern slopes and the eastern extremity of the mountains are more barren and are in pasture, scrub, thickets, and steppe. The vegetation is likewise scanty near the towns and principal routes where the forest has been destroyed to provide fuel or additional pasture.

The bramble thickets and undergrowth in the forest are

locally thick enough to retard movement. Fuel and forage are generally adequate throughout the area. There is a scarcity of easily worked softwoods for construction.

(4) Danubian Tablelands.

(a) *General.* In the northwest this area was originally a treeless grassland. The areas to the south and east are botanically transition zones between the grassland and the forests of the Balkans. The original vegetation of the whole area has been much altered by man.

(b) *The Balkan Foothills.* The foothills consist of thickly wooded uplands and valleys cultivated in wheat, corn, apples, vineyards, and plums, fodder and garden crops. Almost in every locality the vegetation is adequate for concealment, fuel, fodder, and construction.

(c) *The Northern Plateau* is largely pasture with extensive areas in corn and wheatfields around villages. Vineyards and gardens are also fairly common near the villages. Trees are rare except in the stream troughs. In general the region provides scanty fuel, almost no construction materials, little vegetation cover or concealment, but adequate fodder.

(d) *The Deli Orman.* The sub-region is covered with low, scrub forest intermixed with pasture and some grain fields.

(e) *The Varna-Kamchiya.* This area resembles the Balkan Foothills in vegetation cover. In the south, especially, this region is largely clothed with a second-growth hardwood forest which will retard movement. Marsh and swamp vegetation, and intensively cultivated fields share the valley bottoms.

24. Seasonal change**A. General.**

The seasons generally resemble the winter, spring, summer, and autumn of northeastern United States. However, in the extreme south and east the seasonal change is somewhat less than in the United States and includes many characteristics of Mediterranean lands. In general, the seasonal change becomes greater toward the northwest with the greatest increase occurring north of the Central Balkan divide.

B. Specific.**(1) Southern Highlands.**

(a) *Southwestern Mountains.* The soil on the ridges is generally frozen and snow-covered from December to March. With the beginning of the thaws the hillsides are gullied by flash floods. Mud is not unusually serious because of the rocky nature of the hillsides. Roads become muddy but dry rapidly. Summer weather comes late and foliage is not especially thick except locally in the hardwood forests on the lower slopes. Many of the uplands are barren or covered only with low shrubs which are concealed by the snow after autumn sets in.

(b) *Struma-Strumitsa Basin.* Winters have alternating cool and cold spells. The snow cover is intermittent and during most of the season the ground is muddy or even marshy except on the gravelly and stony areas. Spring is early and foliage begins to afford some concealment in April. During this season the streams from the mountains flood, forming local obstacles, and the soil remains muddy on the bottomlands. In May the soil becomes dry and dusty. The fields of

tobacco, grain, vegetables, and other crops are a bright green in contrast to the duller colors of the hillsides. The summer foliage in the lowlands is rarely thick enough to provide much concealment, except possibly in the thickets near the stream. The terrain becomes increasingly dry during the summer and the tributary streams dry up or become trickles until they are revived by the autumn rains.

(c) *The Upper Struma Basins.* The seasonal regime in the lowlands resembles that of the preceding region except that conditions are not so dry in summer; in the intervening highlands the regime resembles that of the Southwestern Mountains.

(d) *Vitosha Planina.* The subregion has a regime resembling that of the Southwestern Mountains but with somewhat more extreme seasonal change on the summits.

(e) *Rila Planina.* The ground in the higher areas of these mountains is frozen and snow-covered half of the year. Snow remains on the higher summits as late as July. In spring, flash floods and rock slides are dangerous and upland meadows become boggy. The forests on the slopes consist largely of pine and fir, and are therefore almost equally thick throughout the year.

(f) *Pirin Planina.* This is similar to the Rila Planina but has a shorter winter.

(g) *Central Rhodope.* In winter these mountains are snow-covered and the foliage disappears from the trees and the undergrowth. The winter is much more severe in the north than in the south, and on the shady slopes than on the sunny slopes. In spring (date depends on exposure) foliage appears rapidly. Muddy conditions are not severe except in the few basins (e.g., the Nevrokop Basin) because the soil is thin and the area is well drained by streams which rise rapidly after thaws and rains. In summer, foliage remains verdant except in extreme south where drought is common.

(h) *Eastern Rhodope and Sakar-Strandzha Hills.* Both of these subregions have moderate winters with snow on the ground only for a few days at a time except on the highest hills. The foliage is sparse during the winter, luxuriant in late spring and early summer, somewhat sparser in late summer. This area is generally well drained except near the Maritsa River. Streams flood moderately in the spring and all but the smallest are perennial.

(2) Central Depression.

(a) *Sofia Basin.* In mid-winter the ground is snow-covered (snow rarely exceeds two feet); in late autumn and early spring the snow cover is intermittent. In spring it is extremely muddy except on the higher terraces and gravelly slopes. The luxuriant vegetation of summer brightens the landscape but does not provide much concealment for large units except in thickets near streams and on the adjacent hills.

(b) *Sub-Balkan Basins.* Winters are moderate, especially to the east, with only intermittent snow cover. In spring, vegetation is luxuriant, especially in the west, with numerous clumps of trees, vineyards and shrubs offering moderate concealment. The soil is generally well-drained at all seasons except adjacent to streams. Stream flow is perennial with high water in late spring, low water in late summer.

(c) *Sredna Gora.* This subregion is similar to The Central Rhodope.

(d) *Plovdiv Basin.* The soil is frozen for only short periods; snow is rare. Vegetation lacks foliage in winter. In spring

wide belts near the river are extremely muddy or marshy. Rivers flood and spread over wide areas. Vegetation is thick but low in spring and early summer; it provides concealment only in the wooded hilly areas near the edge of the region. The wheat crop is harvested in June; in summer the fields are in stubble.

(e) *Zagora and Middle Tundzha Basins.* These subregions have seasonal regimes similar to that of the Plovdiv Basin. The land, however, is more rolling and the marshy and flooded areas in spring are more closely limited to the vicinity of the main streams. The slopes are often extremely slippery when muddy, but tend to drain and dry quickly after rains.

(f) *Burgaz Basin.* Winters are cool but with only a few extreme days. The soil remains unfrozen and snow is present only for very short periods. The vegetation becomes green early in the spring and occurs in clumps of brush and forest which afford good local concealment. The soil is muddy and often extremely sticky during the spring rains, dusty during the summer, and muddy again during late autumn and winter.

(3) *Balkan Mountains.* The soil is frozen and snow-covered from December through March in the west, for less than a month in the Eastern Balkans. Landslides and flash floods are a great danger in spring and after summer thunderstorms. The vegetation in forests and thickets on lower slopes is deciduous and provides fair concealment during late spring and summer. Roads become muddy after rains in the Central and Eastern Balkans.

(4) Danubian Tablelands.

(a) *Balkan Foothills.* Winter is severe and characterized by snow and frozen soil. Spring is excessively muddy in the valleys although hillsides are well-drained. Thunderstorms occur in spring and saturate the land. Vegetation is luxuriant but late; in summer concealment is to be found in the woods and orchards almost everywhere. Rains continue intermittently all summer and convert the flatter fields into mud.

(b) *Northern Plateau.* The winter there is comparable in severity to that of the Ukrainian Steppes. In winter snow and snowdrifts may isolate villages for as much as two months. A short, warm spring begins in April and converts the very deep soil into thick mud. Shortly after the wheat grows rapidly and it is harvested in June. Corn occupies many of the fields in summer. Summer is hot and dusty. There is little vegetation high enough to afford concealment except in the stream troughs where woods, brush and orchards are common. Streams flood in spring and have water throughout the year.

(c) *Deli Orman.* The seasonal regime is similar to that of the Northern Plateau except that more scrub and woodland on the uplands provide concealment in summer.

(d) *Varna-Kamchiya Region.* The seasonal regime there is similar to that in the Burgaz Basin but the winters are somewhat colder.

25. Critical Areas

A. General.

In a country as rural as Bulgaria where most localities are relatively self-sufficient, it is difficult to select critical areas. Each crossroads town is critical to a certain extent. The areas selected below are the most critical, especially as

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regards transport connections with the foreign sources upon which Bulgaria depends for her military supplies. (Figure II - 5.)

B. Specific.

(1) *The Sofia Basin.* Sofia is the military, political, and economic capital of Bulgaria and the geographical center of the Balkan Peninsula. It is also the principal transportation center with the rail and road routes extending in all directions. Occupation of the Sofia Basin would largely control communications between other parts of Bulgaria and Central Europe.

(2) *The Plovdiv/Kazanlik/Stara-Zagora Triangle.* This thickly populated part of the Central Depression controls most of the transportation routes of central Bulgaria and includes the bulk of the few industries producing military supplies.

(3) *Burgaz.* The port whence starts the easiest route from the Black Sea into the Central Depression.

(4) *Varna.* This is the principal port of Bulgaria and has good connections with the Danube and the Northern Plateau.

(5) *Ruse (Ruschuk).* Ruse is the principal Danubian port

and is an oil-refining center. Trans-Danubian connections with Rumania are relatively good at this point.

(6) Other communication centers of more importance might be classed as critical areas. These include the Danubian ports of Lom and Vidin and the inland cities of Pleven, Trnovo and Sliven.

26. Routes to critical areas

A. General.

The north-south routes pass through mountainous terrain with the single exception of the Edirne/Stara-Zagora route. The east-west routes pass through the Central Depression or the Danubian Tablelands with relative ease and are constricted mainly near the Yugoslav frontier. The approaches are in every case relatively difficult from the west and south, relatively easy from the north and east. Sofia, the capital, is approached only through constricted uphill routes. The other critical areas are relatively more accessible.

B. Specific.

Details on routes are presented on Figures II - 6 to II - 21.

FIGURE II-5
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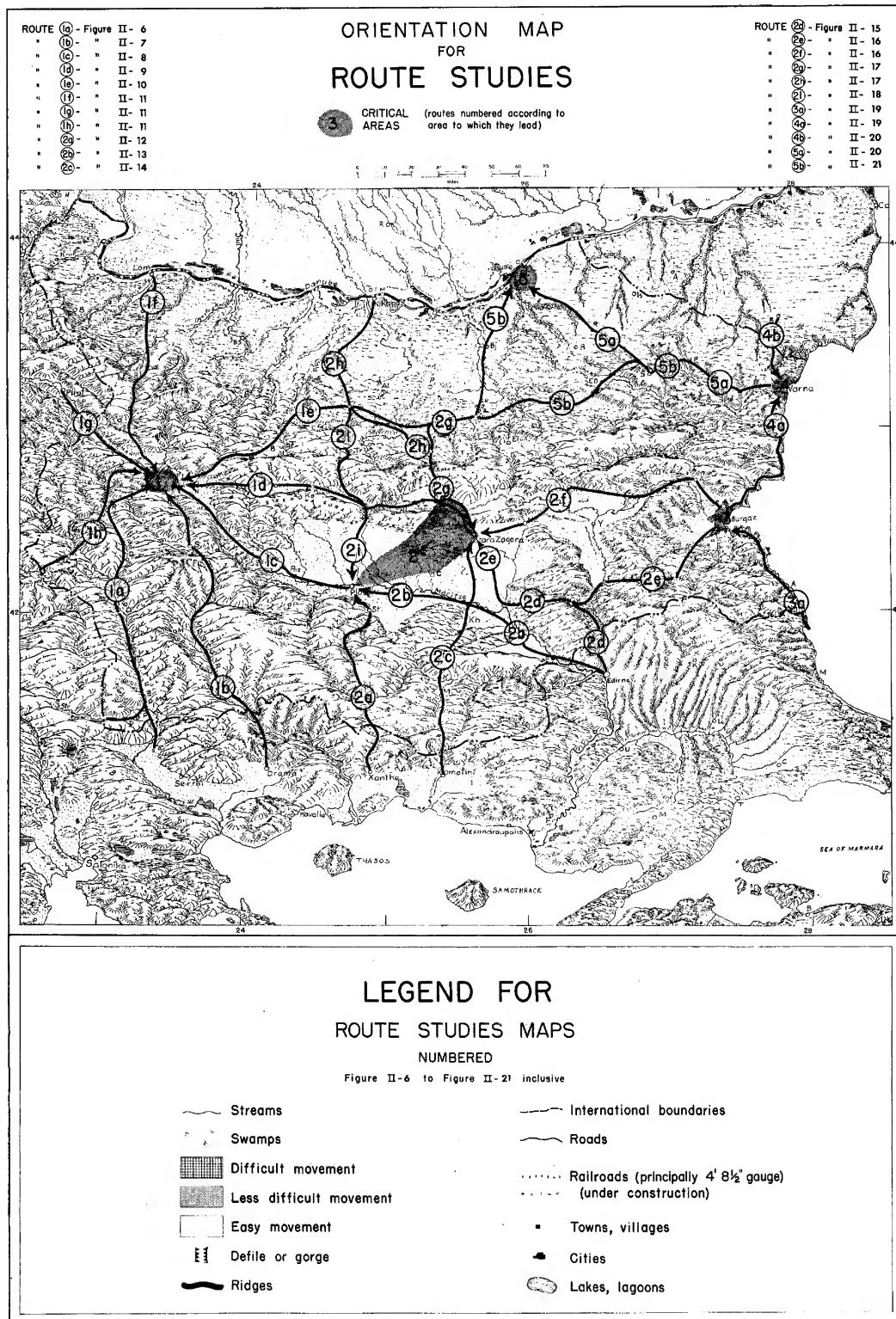
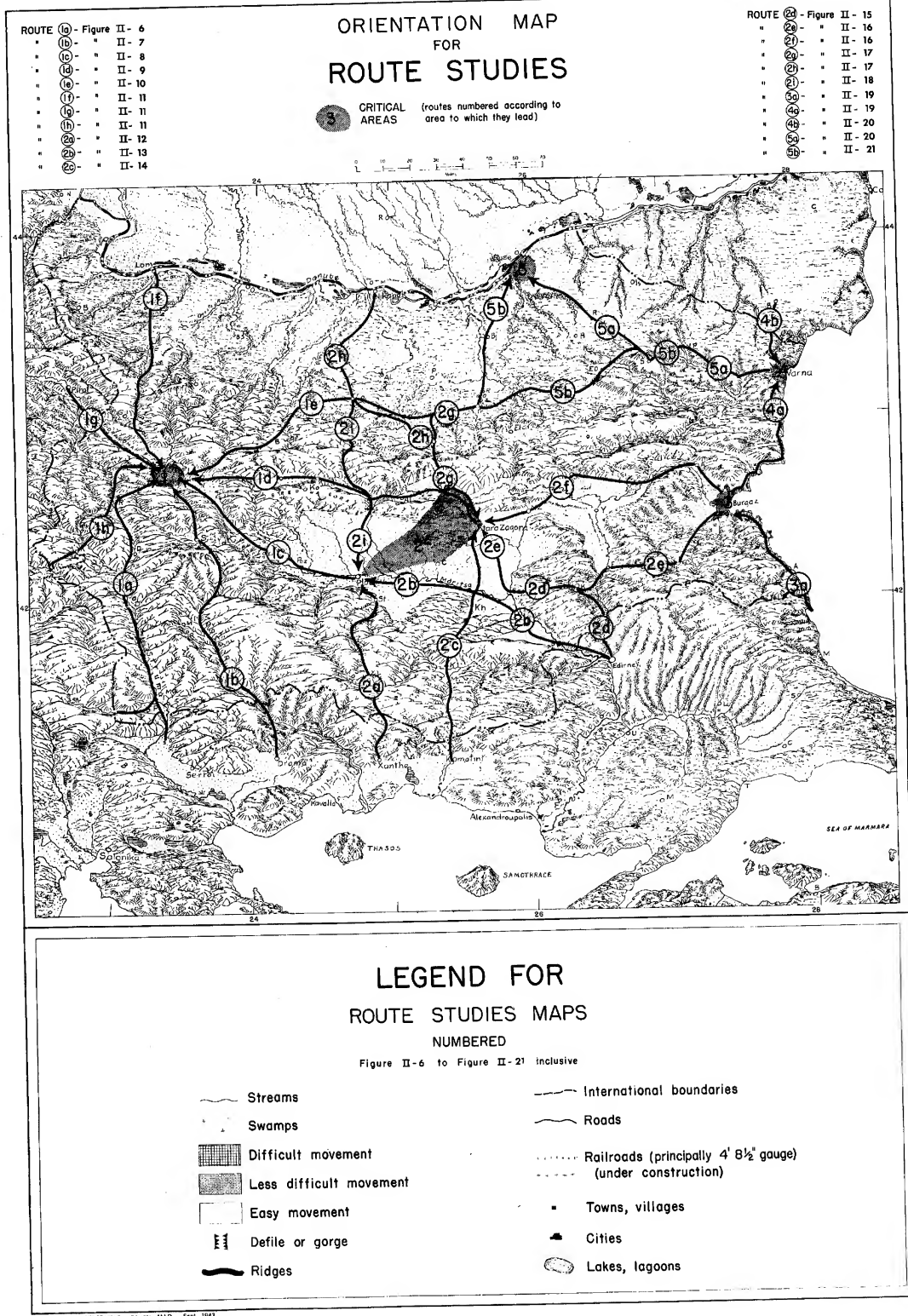


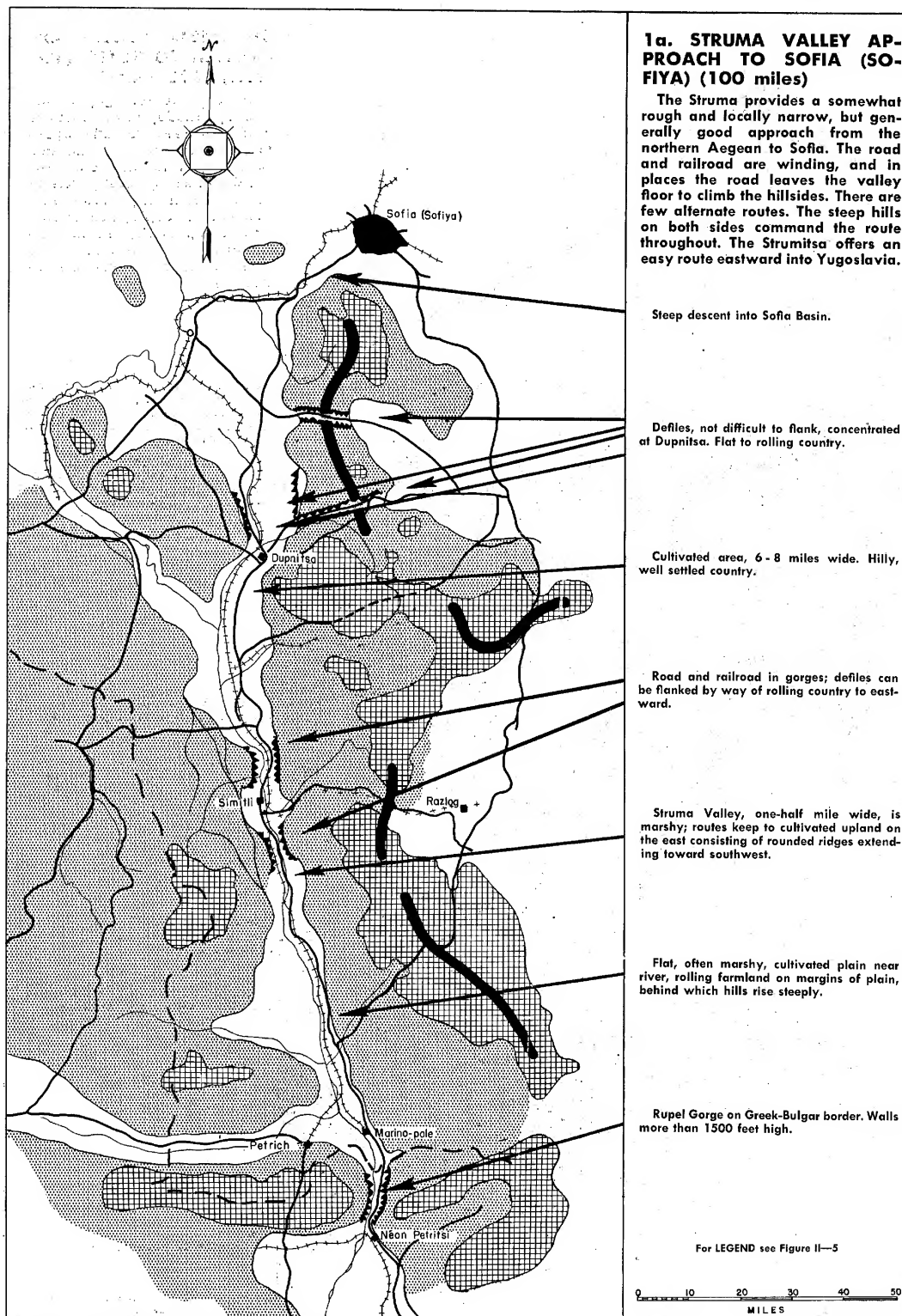
FIGURE II-5
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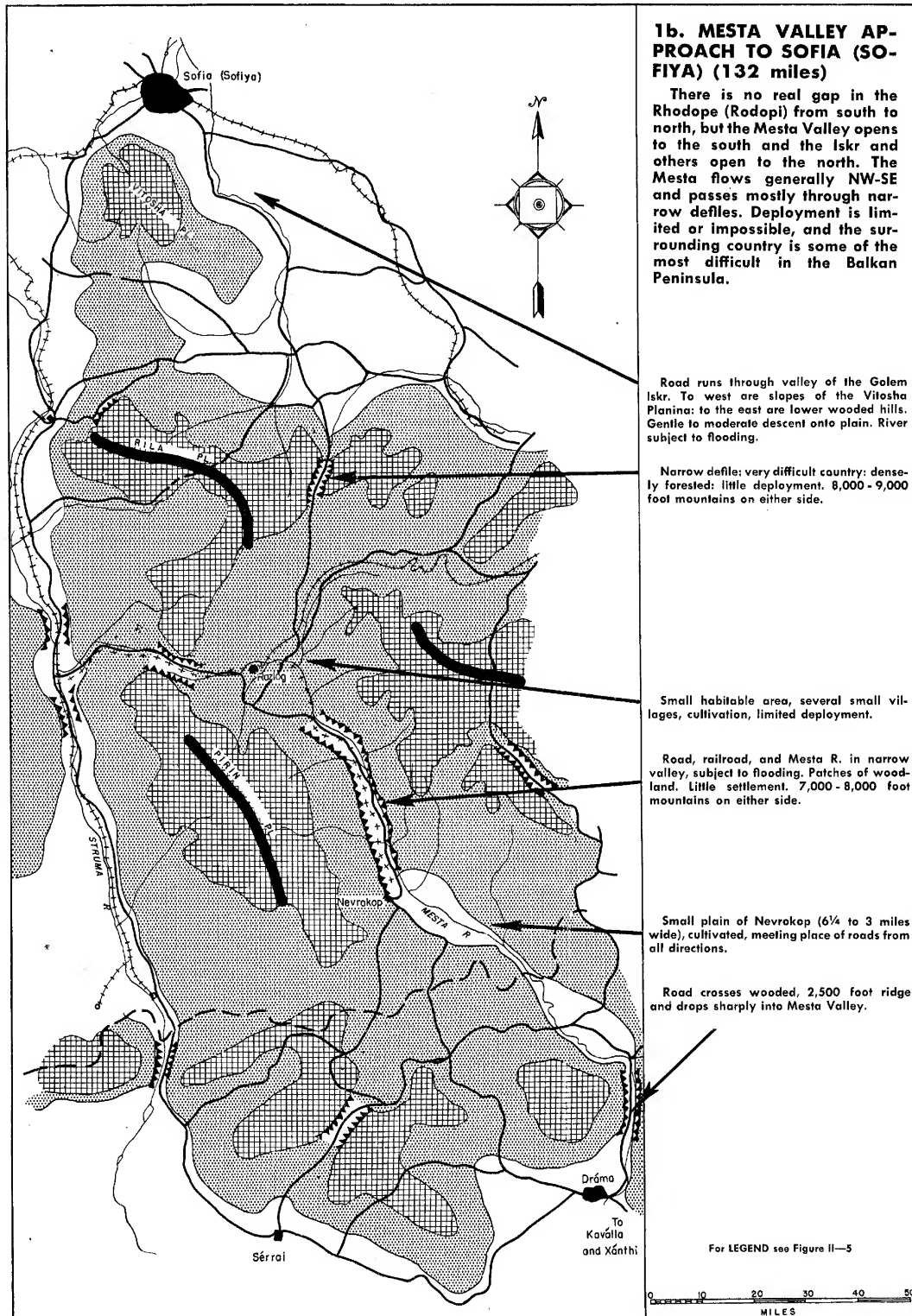
MILITARY GEOGRAPHY

Page II - 15

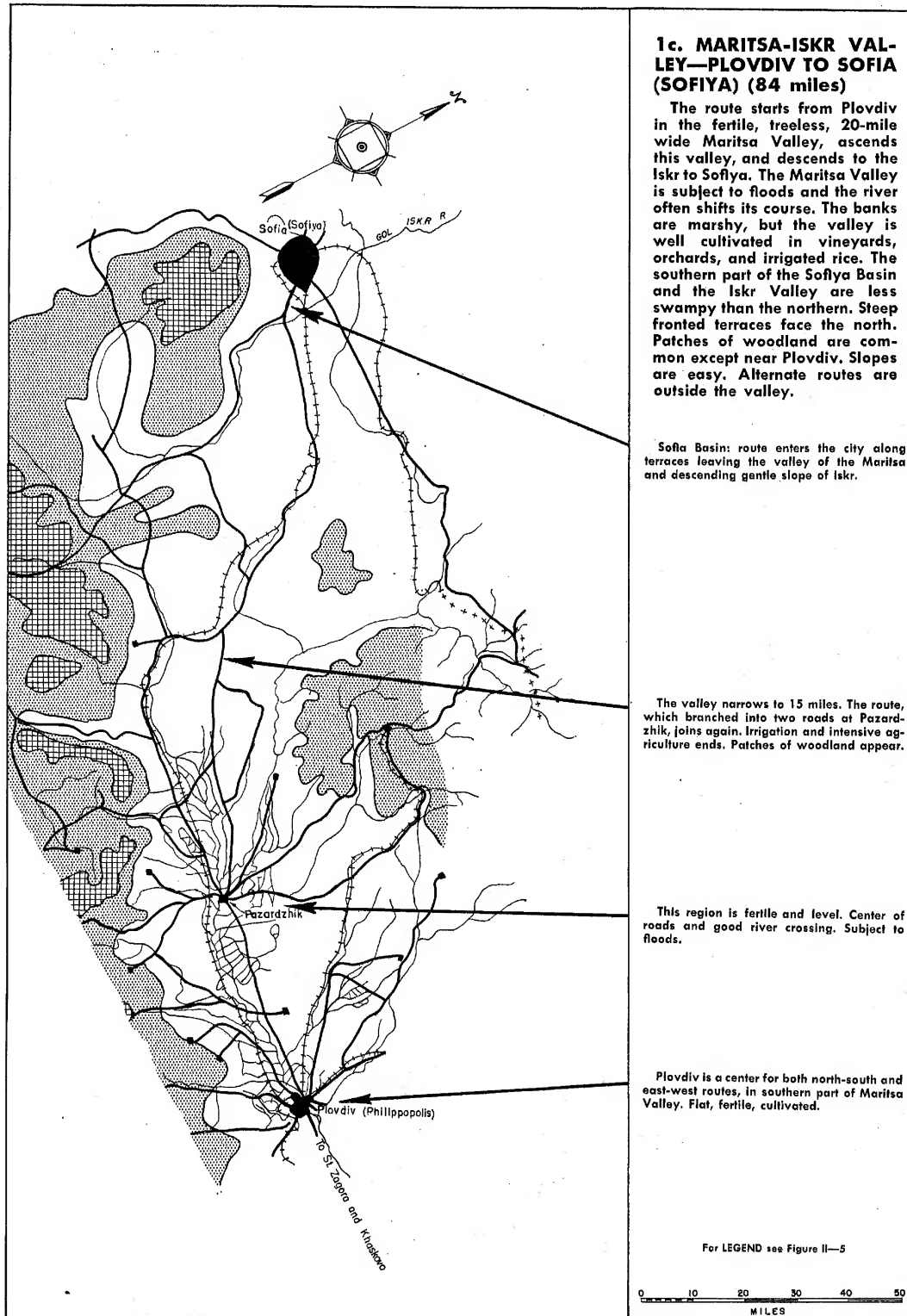
FIGURE II - 6
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FIGURE II - 7
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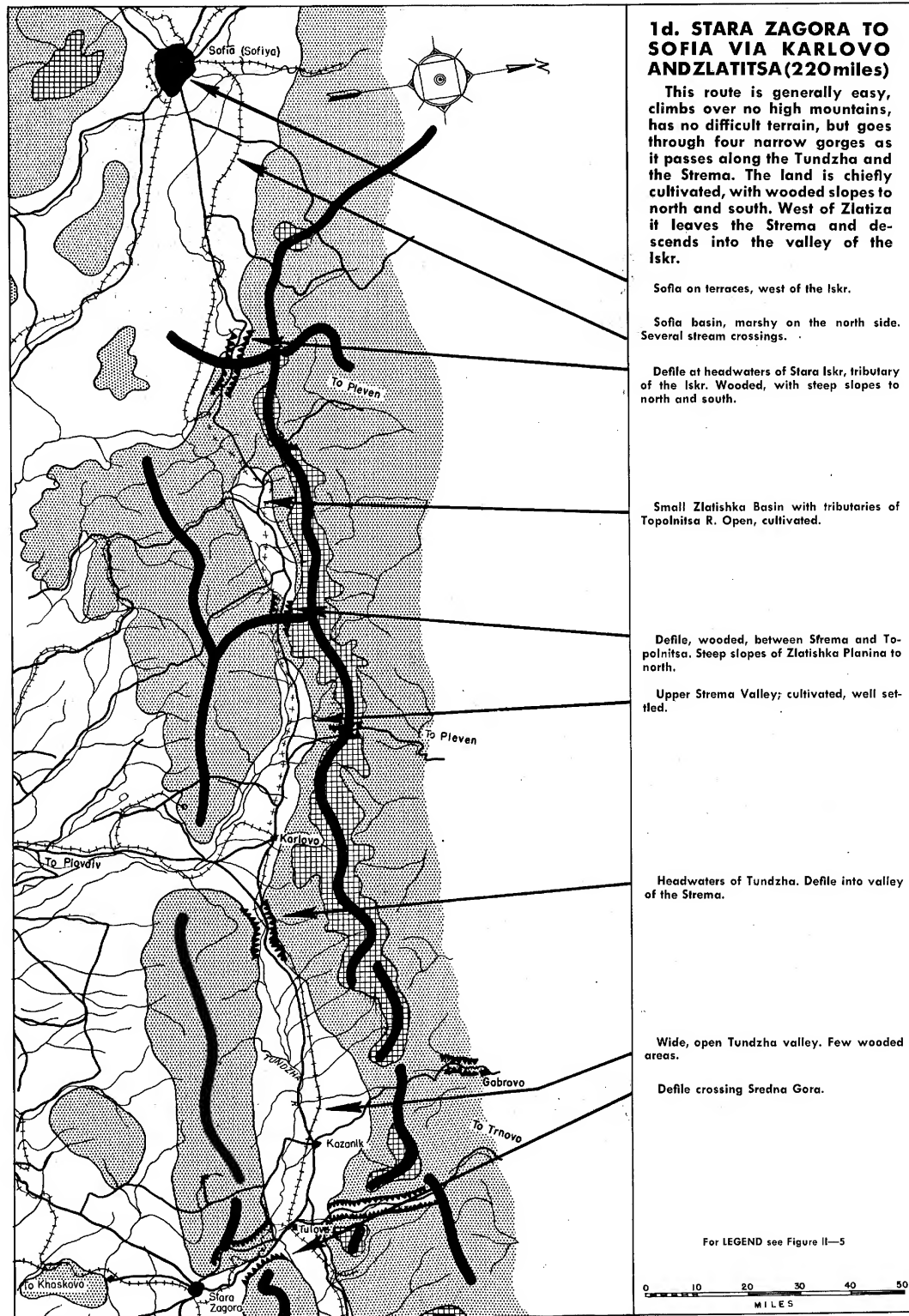
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FIGURE II - 8
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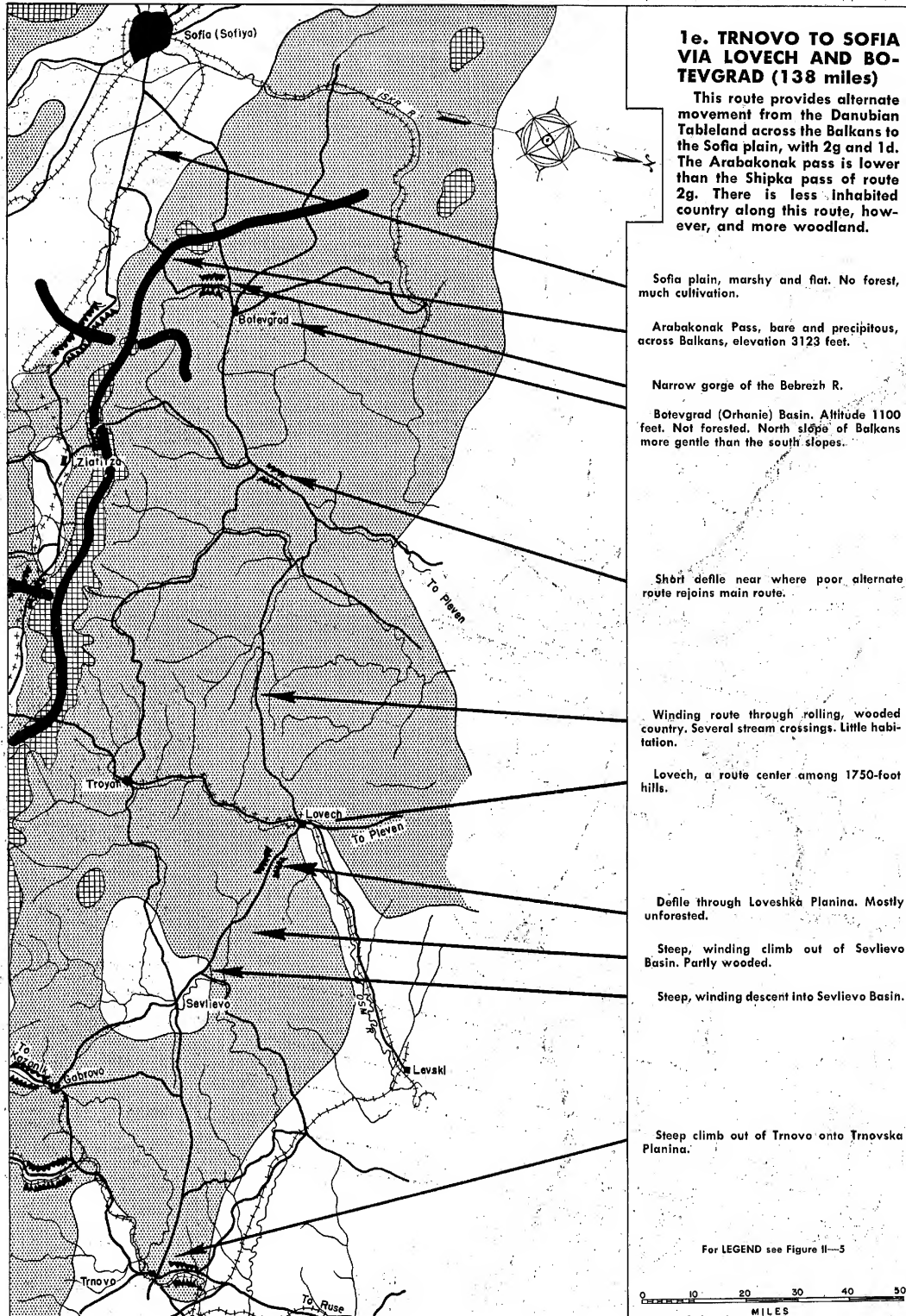
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MILITARY GEOGRAPHY

Page II - 19

FIGURE II - 10

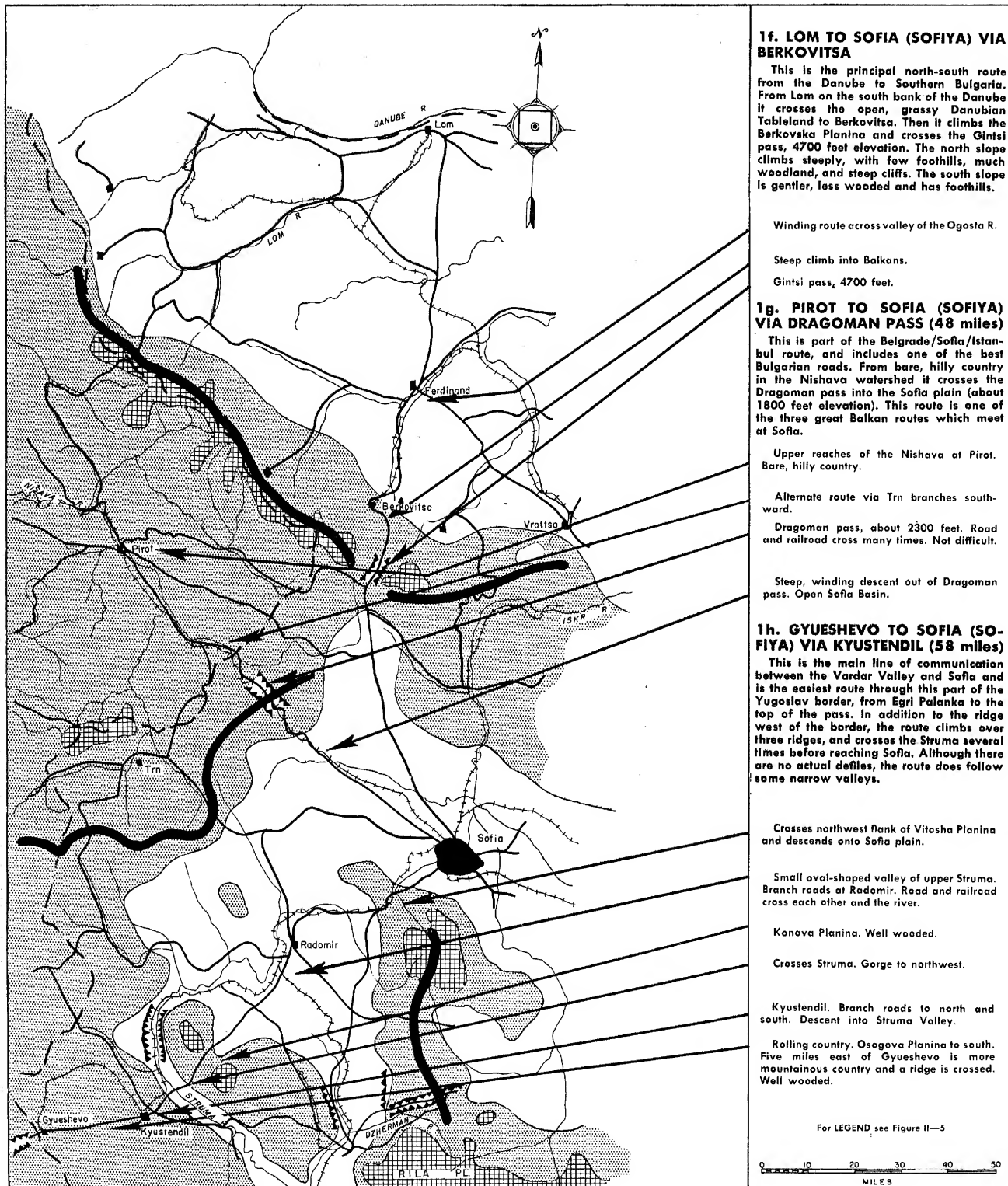
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FIGURE II - 11

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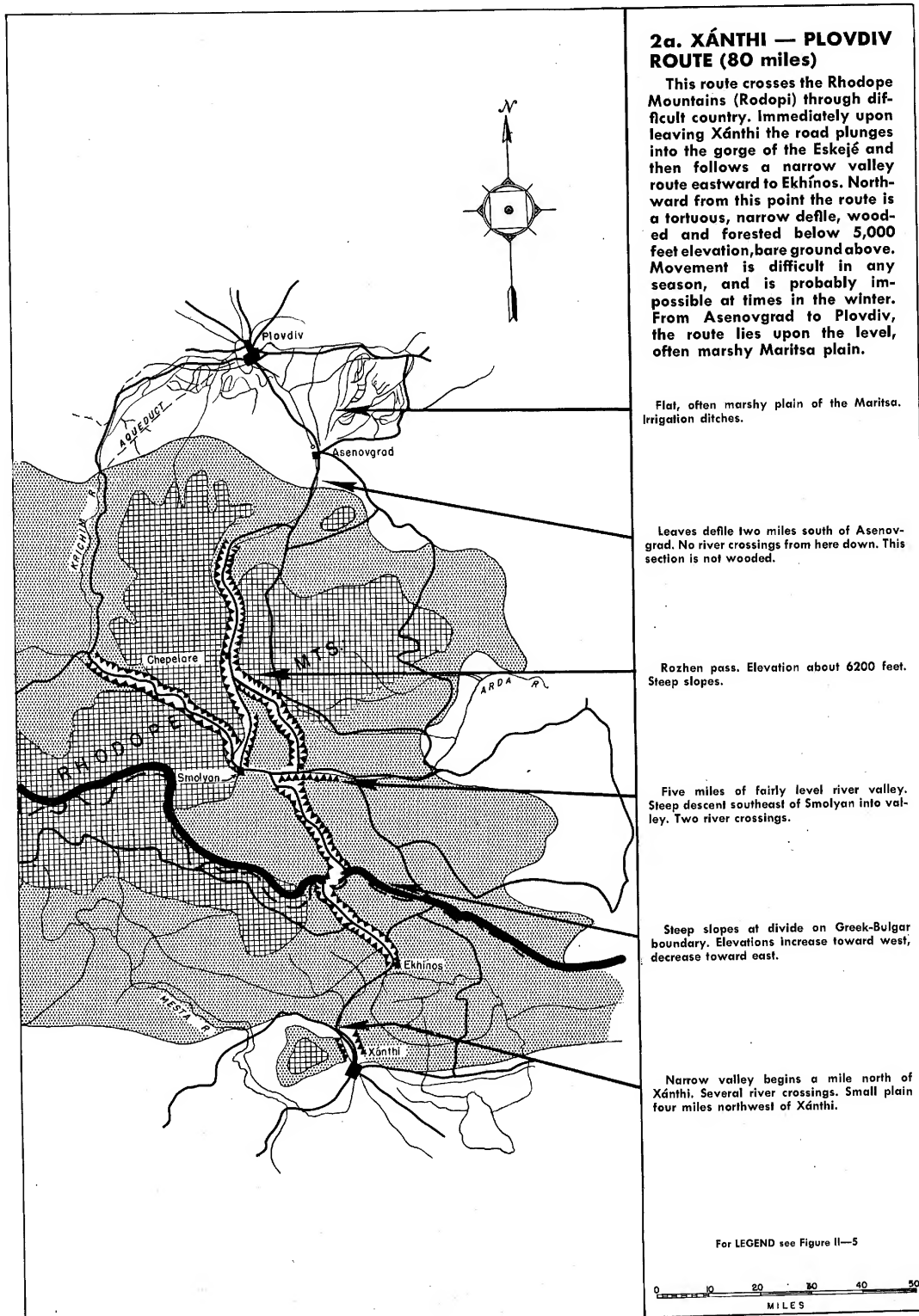
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MILITARY GEOGRAPHY

Page II - 21

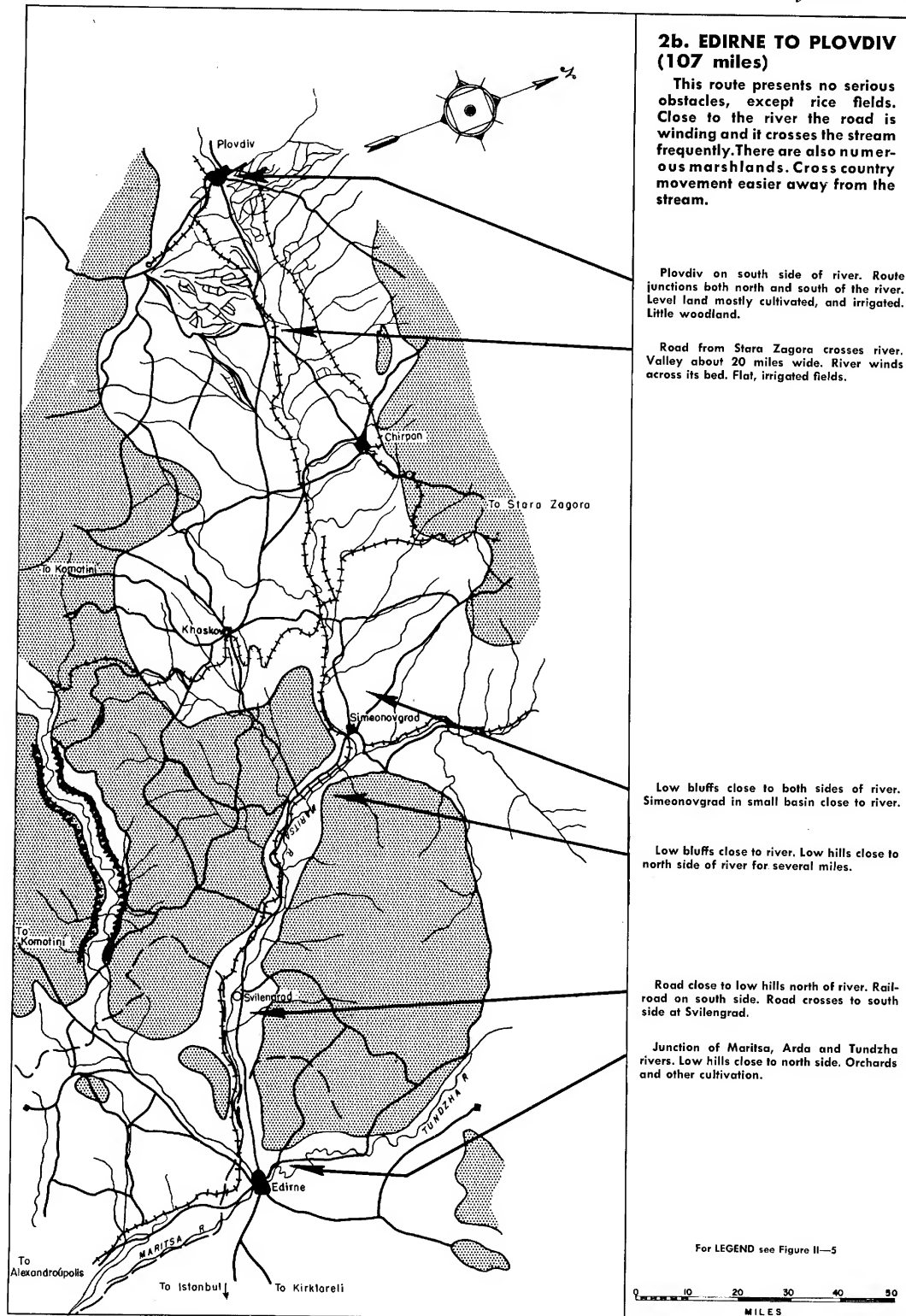
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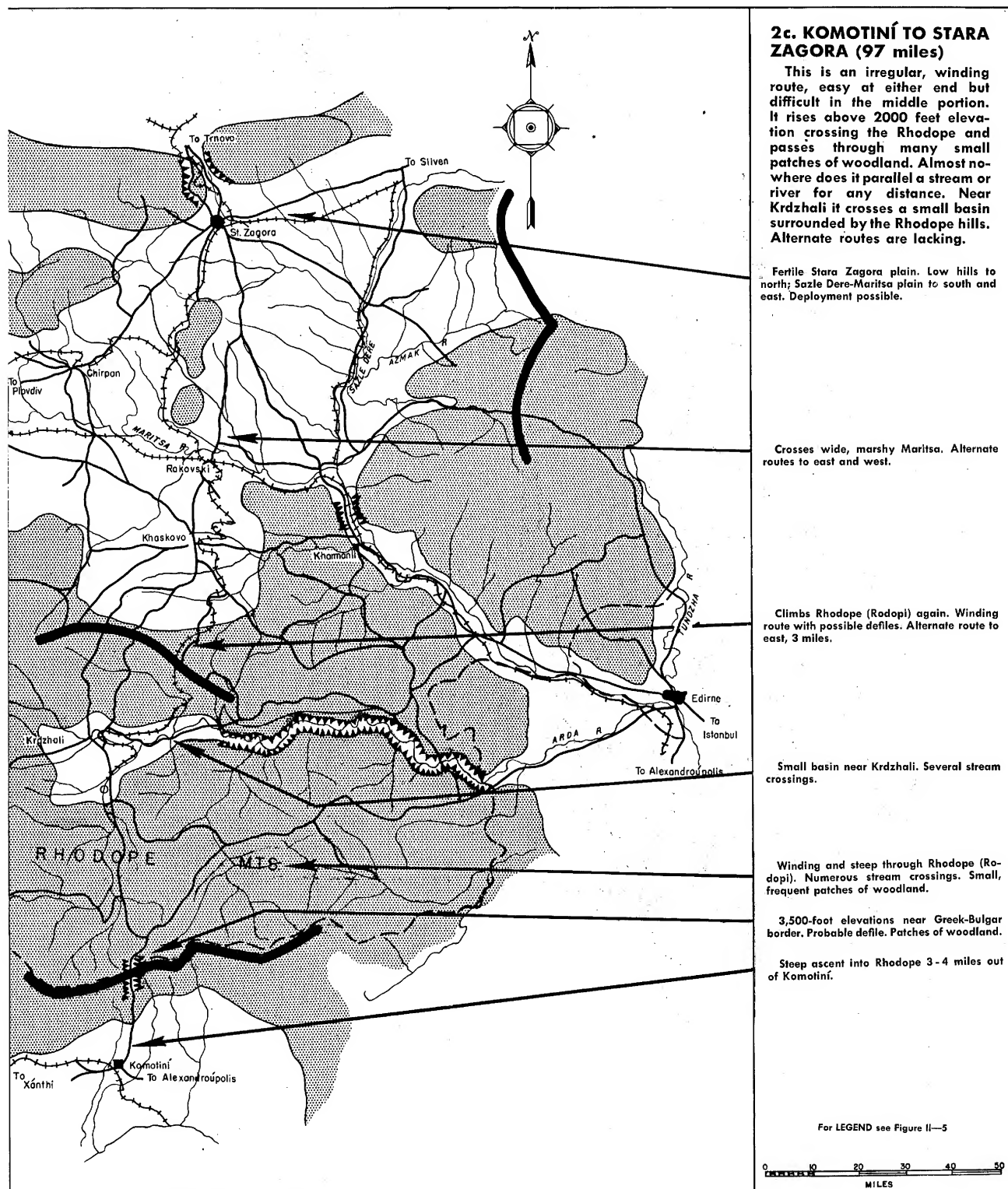


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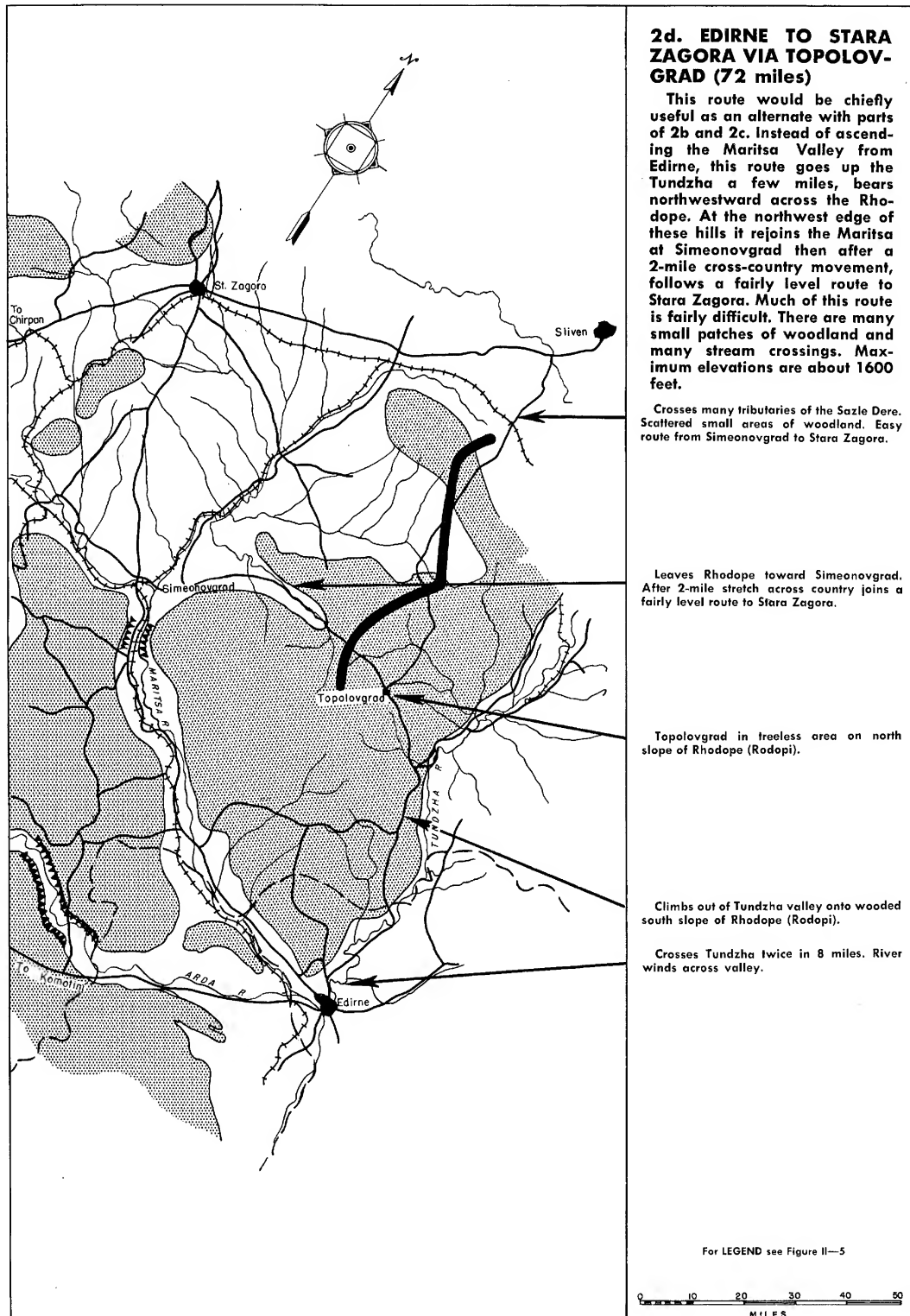
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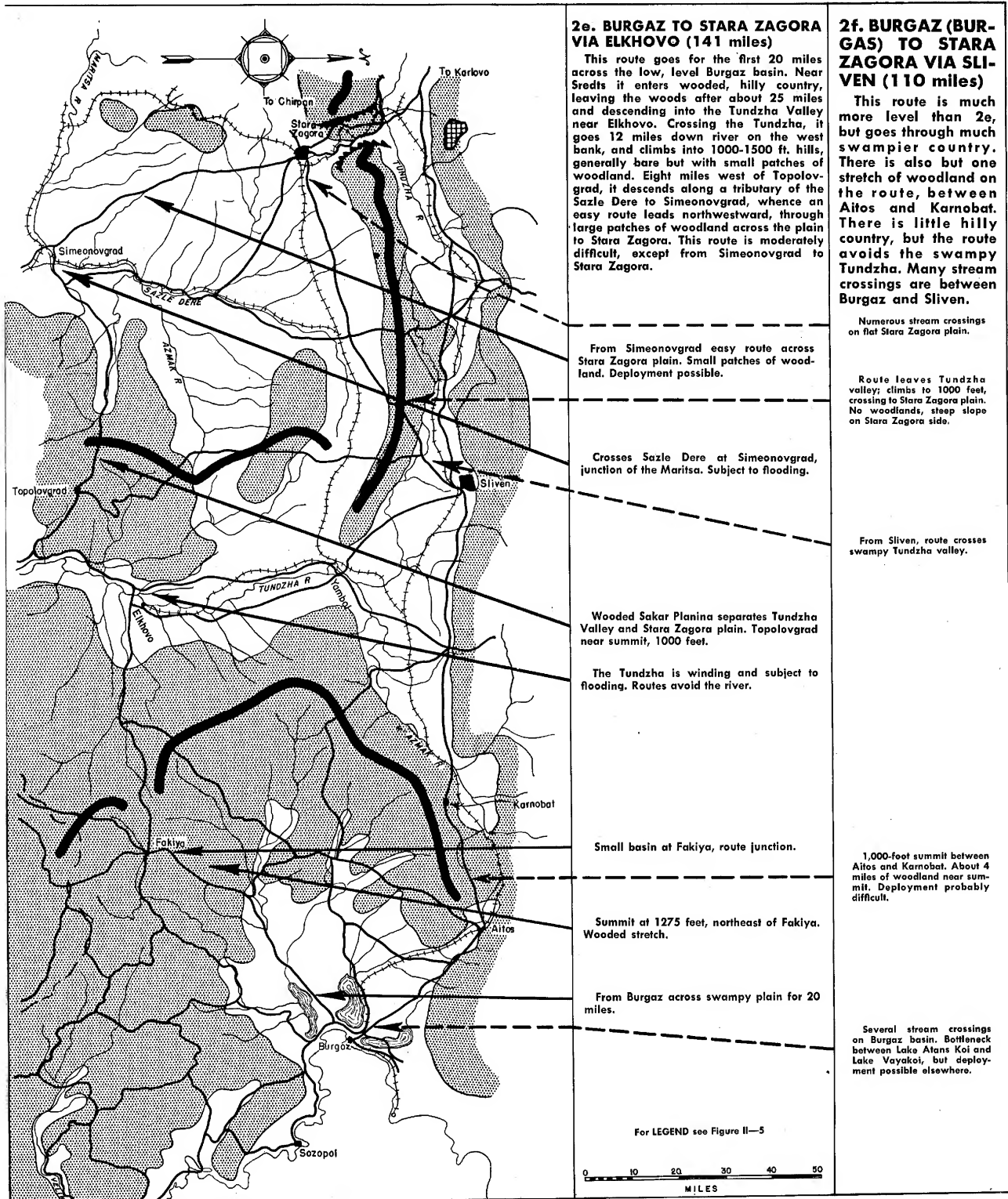
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FIGURE II - 14
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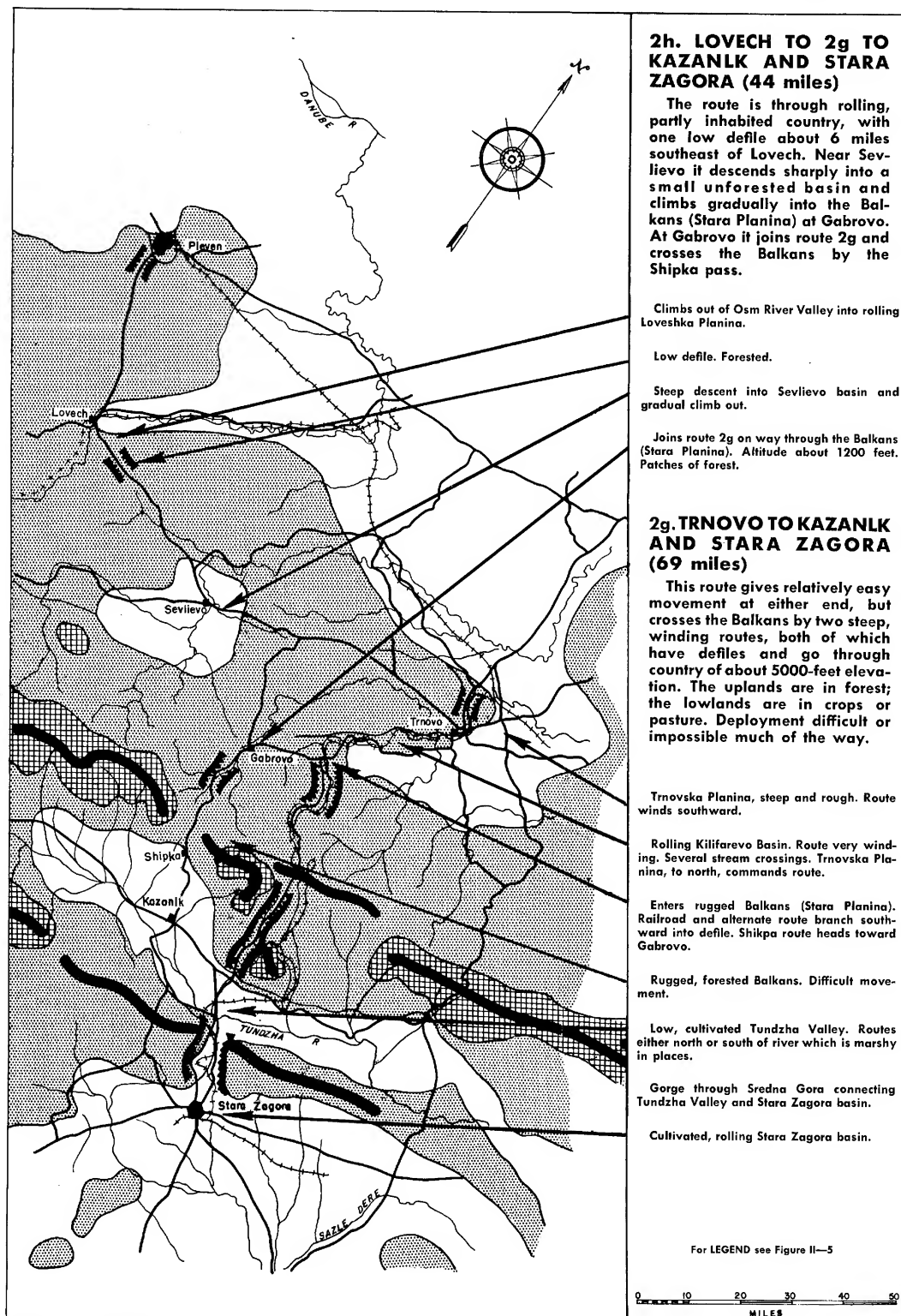
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FIGURE II - 15
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FIGURE II - 16
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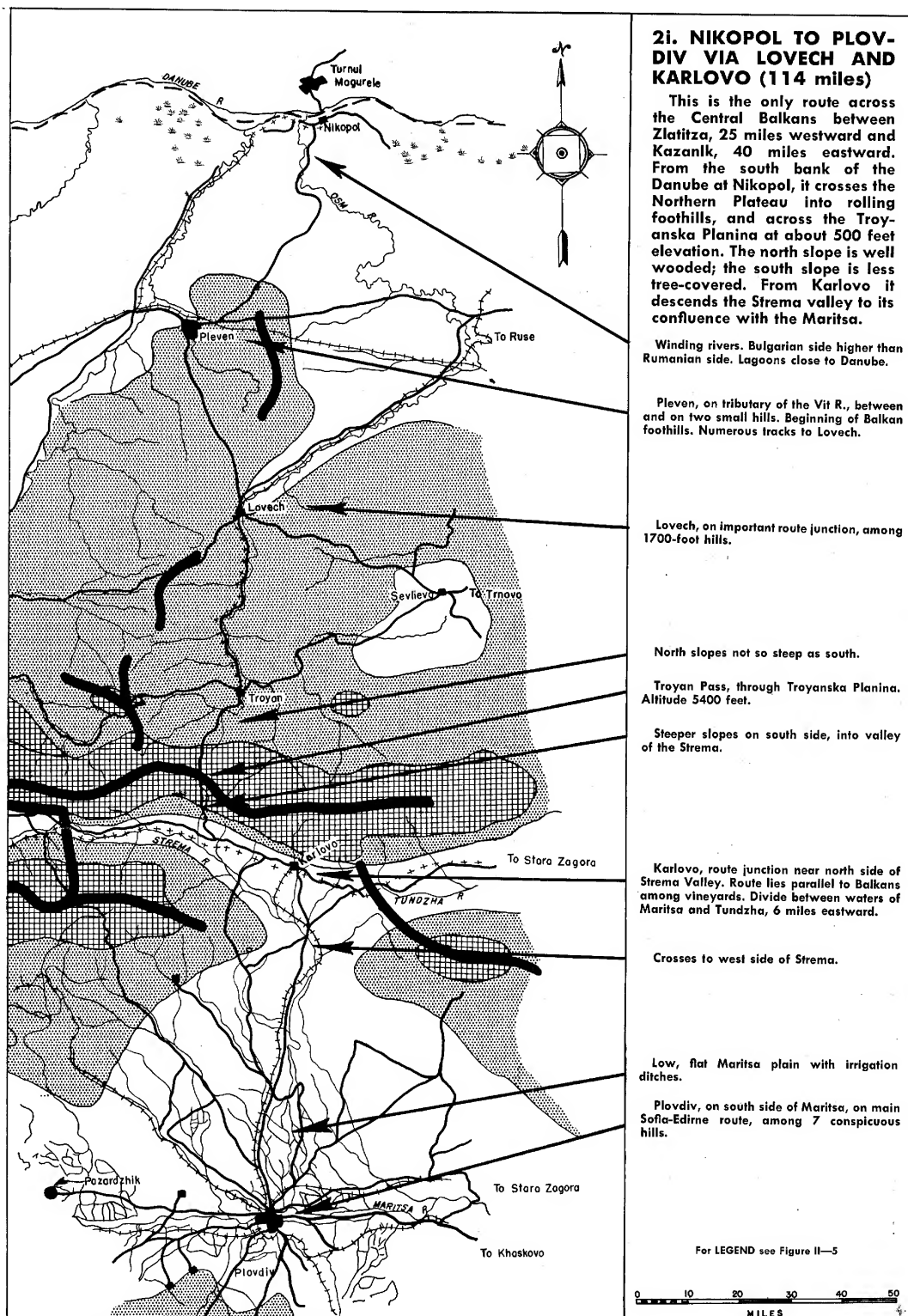
FIGURE II-17
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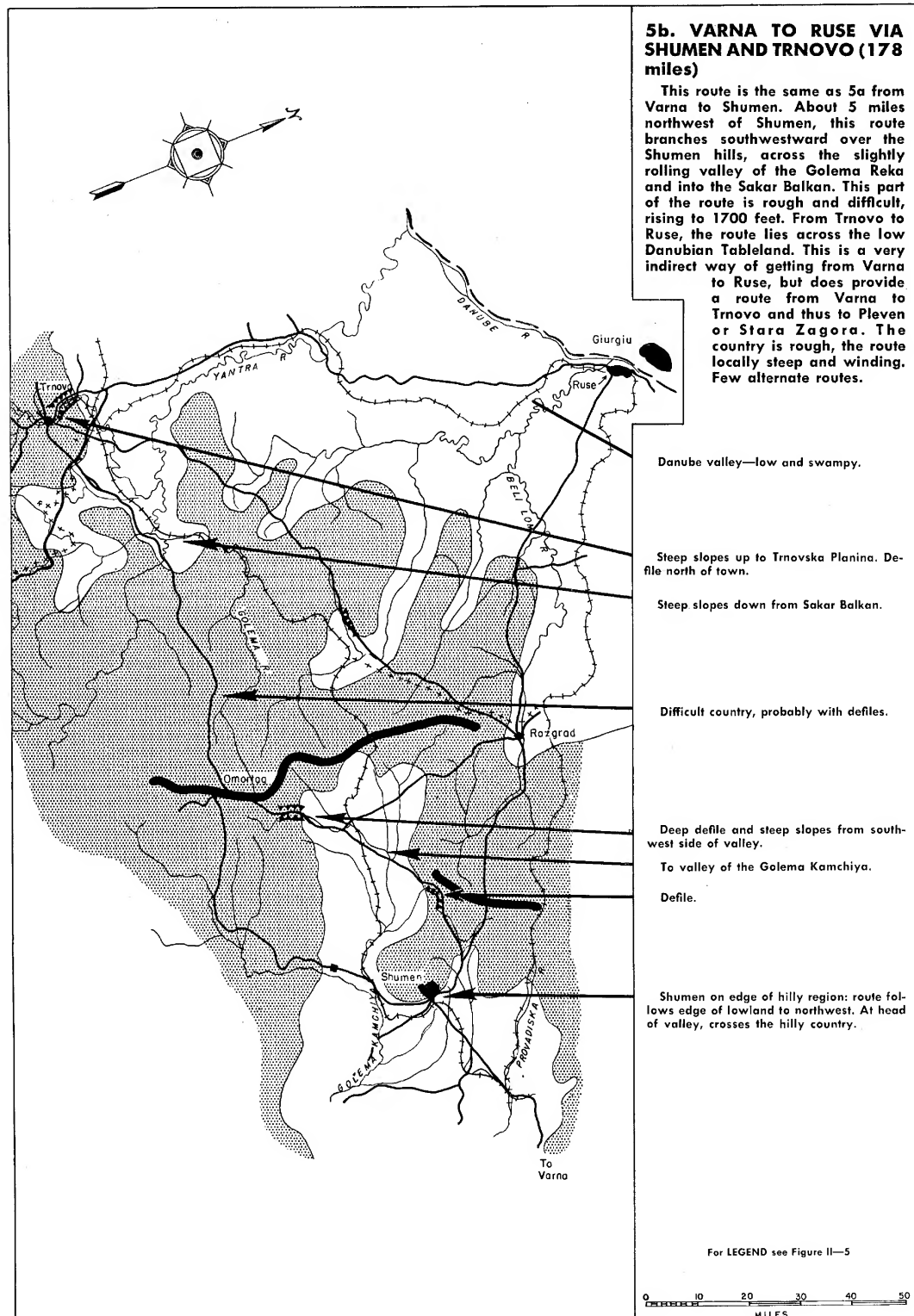
MILITARY GEOGRAPHY

Page II - 27

FIGURE II - 18
JANIS No. 38

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FIGURE II - 21
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